



CITY OF CARDIFF.

ANNUAL REPORT

FOR 1912

OF THE

MEDICAL OFFICER OF HEALTH.

EDWARD WALFORD, M.D., D.P.H., F.R.MET.SOC.,

MEDICAL OFFICER OF HEALTH, CITY AND PORT OF CARDIFF;

MEDICAL OFFICER, CARDIFF EDUCATION AUTHORITY.

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* Cert. Royal San. Inst.

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CITY OF CARDIFF.

CITY HALL,

CARDIFF,

May, 1913.

TO THE RT. HON. THE LORD MAYOR, ALDERMEN, AND MEMBERS
OF THE CITY COUNCIL OF CARDIFF.

MY LORD MAYOR AND GENTLEMEN,

I have the honour to present to you my twenty-fifth annual report. This report deals with the health of the City of Cardiff, and with the administrative work carried out in the department of the Medical Officer of Health, during the year 1912.

The following is an extract from the General Order of the Local Government Board, dated 13th December, 1910, relating to the annual reports of medical officers of health :—

He shall as soon as practicable after the thirty-first day of December in each year make an Annual Report to the Council, up to the end of December, on the sanitary circumstances, the sanitary administration, and the vital statistics of the district.

In addition to any other matters upon which he may consider it desirable to report, his Annual Report shall contain the information indicated in the following paragraphs; together with such further information as we may from time to time require :—

(a)—An account of any influences threatening the health of the district, the prevalence of infectious or epidemic diseases therein, and the measures taken for their prevention.

(b)—An account of all general and special inquiries made during the year.

(c)—An account of the work performed by the Inspector of Nuisances during the year, including the statement supplied in pursuance of Article XX. (16) of this Order.

(d)—A statement as to the conditions affecting the wholesomeness of the milk produced or sold in the district.

(e)—A statement as to the conditions affecting the wholesomeness of foods for human consumption, other than milk, produced or sold in the district.

(f)—A statement as to the sufficiency and quality of the water supply of the district and of its several parts, and in areas where the supply is from waterworks, information as to whether the supply is constant or intermittent.

(g)—A statement as to the pollution of rivers or streams in the district.

(h)—A statement as to the character and sufficiency of the arrangements for the drainage, sewerage and sewage disposal in all parts of the district.

(i)—A statement as to the privy, water-closet, and other closet accommodation in the district, including information as to the approximate number of each type of privy and closet.

(j)—A statement as to the character and efficiency of the arrangements for the removal of house-refuse, and the cleansing of earthclosets, privies, ashpits, and cesspools in the district.

(*k*)—A statement with regard to the housing accommodation of the district as required by Article V. of the Housing (Inspection of District) Regulations, 1910, and an account of any other action taken by the Council under the Housing, Town Planning, &c., Act, 1909, bearing on the public health.

(*l*)—A statement as to the vital statistics of the district, including a tabular statement, in such form as we may from time to time direct, of the sickness and mortality within the district.

(*m*)—Where the Medical Officer of Health is appointed by the Council of a County Borough, or by a Council having delegated powers under the Midwives Act, 1902, a statement as to the administration of that Act in the district.

Section 132 of the Factory and Workshop Act, 1901, requires that the Medical Officer of Health shall report specifically on the administration of this Act in workshops and workplaces, and that he shall send a copy of this report to the Secretary of State.

The report also includes a statement prepared by the Inspector of Nuisances, who is required by the Board's General Order, Article XX. (16), to furnish the Medical Officer of Health with a tabular statement containing the following particulars :—

- (*a*) The number and nature of inspections made by him during the year.
- (*b*) The number of notices served during the year, distinguishing statutory from informal notices.
- (*c*) The result of the service of such notices.

PHYSICAL FEATURES OF DISTRICT.—The City of Cardiff comprises 6,373 acres of land and inland water, exclusive of foreshore and tidal water, and is situated upon impervious strata, consisting for the most part of new red marl; resting upon this formation are the more superficial deposits of river gravel, more or less saturated with water. A gradual rise in the gravel takes place towards the north, so as to attain a level of nearly 40 feet above Ordnance Datum in Queen Street and the Newport Road, and 50 feet at Cathays, where resting on the red marl, it forms a deposit to a depth varying from 8 to 20 feet of good building land, upon which the greater part of the north-east side of the town is constructed. The part of the town situated on the west of the River Taff is, in the northern or Canton District, on an alluvial deposit of clay, sand, and gravel; the southern or Grange-town ward being on the estuarine mud—a stiff blue clay of marine origin, which forms also the soil in the neighbourhood of the Docks and South Splott. This low-lying part of the town is now protected from the sea and tidal waters by banks, and has in many parts been raised by the deposit of made soil composed of ashes and house refuse collected by the public scavengers. The southern part of the town therefore consists of alluvial land at a very slight elevation above the ordinary sea level near the mouths of the Rivers Rhymney, Taff, and Ely.

The Rhymney and Ely Rivers, at the points at which they enter the Bristol Channel, form respectively the eastern and western limits of the City; the Taff flowing in a southerly direction forms a natural division of the town into east and west, each having a separate drainage system.

The area of the City of Cardiff is distributed in Registration Sub-Districts as follows :—East Cardiff, 481 acres, Central Cardiff, 3,832 acres, and West Cardiff, 2,060 acres. The City is also divided into ten municipal wards containing the civil parishes of Canton, Roath, St. John, and St. Mary.

Cardiff is well provided with parks and open spaces, forming admirable recreation grounds and breathing spaces for the inhabitants of the crowded parts of the town. Those places, which belong to the public and are under the control of the Cardiff Corporation, comprise a total area of nearly 400 acres, as follows :—

Acreage. Exclusive of Roads.				Acreage. Exclusive of Roads.			
Acres. r. p.				Acres. r. p.			
Roath Park ...	...	166	0 0*	Llanbleddian Gardens ...	0	0	37
Victoria Park ...	...	19	2 36	Ruthin Gardens ...	0	0	28
Canton Park ...	...	12	0 0	Senghennydd Gardens ...	0	1	19
Loudoun Square ...	...	1	1 36	(North and South)			
Howard Gardens ...	...	1	0 36	Windsor Esplanade Gardens	0	1	18
Adamsdown Square ...	...	0	1 32	Penylan Gardens ...	6	0	0
Plasturton Gardens ...	...	0	2 39	Waterloo Gardens ...	3	0	0
Dispenser „ ...	...	0	3 23	Splott Park ...	18	0	0
Clare „ ...	...	0	0 36½	Llandaff Fields ...	70	3	2
Moorland „ ...	...	1	2 5½	Cathays Park ...	60	0	0
Grangetown „ ...	...	3	0 31	Allen's Bank Crescent Open Space	0	1	16
TOTAL ...				366 acres, 2 roods, 35 perches.			

* Including 66 acres outside the City boundary.

Sir David's Field (Thompson's Park) with an area of 8 acres, 3 roods, 19 perches, was presented to the Cardiff Corporation in the year 1912, by Mr. Charles Thompson.

Grangetown Recreation Ground, with an area of 9 acres, 2 roods, is rented by the Corporation.

In addition to the above-named parks and open spaces, the public has, through the generosity of the owner, access to the following parks:—

	Acres.	r.	p.
Sophia Gardens ...	43	0	25
Cardiff Arms Park ...	17	3	32

HOUSING OF THE WORKING CLASSES.—The Order of the Local Government Board, dated December 13th, 1910, relating to the duties of the Medical Officer of Health and to the information to be given in his annual report, provides that this report shall include—"A statement with regard to the housing accommodation of the district as required by Article V. of the Housing (Inspection of District) Regulations, 1910, and an account of any other action taken by the council under the Housing, Town Planning, etc., Act, 1909, bearing on the public health."

These regulations require that—"The Medical Officer of Health shall include in his annual report, information and particulars in tabular form in regard to the number of dwelling houses inspected under and for the purposes of Section 17 of the Act of 1909, the number of dwelling houses which on inspection were considered to be in a state so dangerous or injurious to health as to be unfit for human habitation, the number of representations made to the Local Authority with a view to the making of Closing Orders, the number of Closing Orders made, the number of dwelling houses, the defects in which were remedied without the making of Closing Orders, the number of dwelling houses which, after the making of Closing Orders, were put into a fit state for human habitation, and the general character of the defects found to exist. He shall also include any other information and particulars which he may consider desirable in regard to the work of inspection under the said Section."

It is the duty of the Local Authority under these regulations to provide for a thorough inspection to be carried out from time to time, according to the varying needs or circumstances of the dwelling houses or localities in the district. They are also to cause to be prepared from time to time by the Medical Officer of Health, or by an officer designated by them, but acting under his direction and supervision, a list or lists of dwelling-houses, the early inspection of which is in the opinion of the Medical Officer of Health desirable.

Under Section 17 (2) of the Act of 1909, it is the duty of the Medical Officer of Health to make official representation to the Local Authority of any dwelling-house which, in his opinion, is unfit for habitation, and if the dwelling-house appears to them to be in such a state as to be unfit, it is their duty to make a Closing Order.

The work of the inspection in connection with this Act has been carried out by the Chief Inspector of Nuisances, Mr. S. Evans, the officer appointed by the local authority for this purpose, who calls the attention of the Medical Officer of Health to any matters requiring his intervention. Altogether 1,761 dwelling houses were inspected under the provisions of this Act during the year 1912.

The inspection is carried out in accordance with the provisions of the regulations, and therefore includes among other matters the following, namely :—

1. The arrangements for preventing the contamination of the water supply.
2. Closet accommodation.
3. Drainage.
4. The condition of the dwelling-house in regard to light, the free circulation of air, dampness, and cleanliness.
5. The paving, drainage, and sanitary condition of any yard or outhouses belonging to or occupied with the dwelling house.
6. The arrangements for the deposit of refuse and ashes.
7. The existence of any room which would in pursuance of sub-section (7) of Section 17 of the Act of 1909 be a dwelling-house so dangerous or injurious to health as to be unfit for human habitation.
8. Any defects in other matters which may tend to render the dwelling-house dangerous or injurious to the health of an inhabitant.

Records of the inspections of the dwelling-houses made under and for the purpose of Section 17 of the Act contain information under a variety of headings, including the following :—

1. The situation of the dwelling-house, and its name or number.
2. The name of the officer who made the inspection.
3. The date when the dwelling-house was inspected.
4. The date of the last previous inspection and a reference to the record thereof.
5. The state of the dwelling-house in regard to each of the matters referred to in Article II. of the regulations.
6. Any action taken by the Medical Officer of Health, or other officer of the local authority, either independently or on the directions of the local authority.
7. The result of any action so taken.
8. Any further action which should be taken in respect of the dwelling-house.

The following tables relate in detail to the inspections, representations, and action taken under the Act.

TABLE I.

Statement regarding houses inspected under the Housing, Town Planning, etc. Act, 1909, during the year 1912 :—

STREET.	Houses Inspected.	Notices re Defects Served.		Notices re Defects Complied.		Houses with Rent exceeding £26 a year.	No Rent paid.	Tenants changed since December, 1909.	Houses Vacant.
		Owners.	Occupiers.	Owners.	Occupiers.				
Adamsdown Place ...	9	2	...	2	...	...	...	6	...
Brien's Court ...	2	...	...	...	...	...	...	...	2
Buzzard Street ...	3	1	...	1	...	...	...	3	...
Chancery Lane ...	44	20	4	16	4	...	...	15	1
Clyde Street ...	24	1	...	1	...	3	1	9	...
Coke Street ...	10	2	3	2	3	...	1	5	...
Constellation Street ...	79	26	...	24	...	23	9	16	...
Cross Street ...	2	1	2	...	2	...	...	2	...
Cumnock Terrace ...	21	6	...	6	...	...	...	14	...
Cumrae Street ...	26	6	...	6	...	...	...	12	...
Cycle Street ...	28	14	...	14	...	...	...	10	...
Daniel Street ...	62	33	...	30	...	3	...	15	1
Davies' Court ...	3	...	...	...	...	...	...	1	...
Davis Street ...	16	8	1	7	1	2	...	7	...
East Wharf ...	4	1	2	1	2	...	...	...	...
Ebenezer Street ...	3	...	...	...	...	1	...	1	...
Evans' Court ...	2	...	...	...	...	...	...	...	2
Florence Street ...	17	...	...	...	...	...	2	9	...
Florentia Street ...	68	11	...	11	...	...	3	29	...
Frederick Street ...	9	1	...	1	...	5	1	2	1
Galston Place ...	11	4	1	1	1	...	1	4	...
Galston Street ...	32	4	...	4	...	1	1	15	1
Garsfield Street ...	2	1	...	1	...	...	...	1	...
Glynn Street ...	55	13	4	10	3	...	1	20	...
Godfrey Street ...	7	2	...	1	...	...	...	...	1
Gower Street ...	2	...	...	...	...	...	...	1	...
Green Garden Court ...	3	...	...	...	...	...	...	1	...
Gulliver's Court ...	2	...	...	...	...	...	...	...	2
Hill's Street ...	9	7	...	7	...	...	...	7	...
Hill's Terrace ...	59	11	5	11	5	...	...	27	...
Homfray Street ...	26	7	2	7	2	2	2	9	...
Inchmarnock Street ...	31	7	1	7	1	...	...	16	...
Ivor Street ...	7	4	...	4	...	...	...	1	...
Ivy Street ...	20	18	8	16	7	...	...	10	...
Kingarth Street ...	21	4	...	4	...	...	...	5	...
Kite Street ...	5	...	1	...	1	...	...	2	...
Knole Street ...	54	27	5	24	5	6	1	13	...
Little Bridge Street ...	2	1	...	1	...	1	...	1	...
Little Union Street ...	4	1	2	1	2	...	...	3	...
Littleton Street ...	23	15	2	7	...	...	...	11	...
Lucas Street ...	5	2	...	2	...	...	...	2	...
Lyndhurst Street ...	43	32	8	29	7	2	...	20	1
Mathew's Court ...	4	...	...	...	...	...	...	...	4
Matlissent Street ...	35	3	9	3	9	8	1	12	1
Morgan Street ...	15	7	...	7	...	...	...	3	...
North Morgan Street ...	13	9	3	8	2	2	...	5	...
Oakley Street ...	74	63	18	34	12	6	1	21	...
Ordell Street ...	79	32	6	12	4	4	1	24	1
Planet Street ...	48	27	1	8	...	1	3	16	1

TABLE I.—continued.

STREET.	Houses Inspected.	Notices <i>re</i> Defects Served.		Notices <i>re</i> Defects Complied		Houses with Rent ex- ceeding £26 a year.	No Rent paid.	Tenants changed since Decem- ber, 1909.	Houses Vacant.
		Owners.	Occu- piers.	Owners.	Occu- piers				
Platinum Street ...	18	2	...	2	...	...	...	4	...
Plymouth Street ...	4	2	...	2	...	...	...	1	...
Prince Leopold Street ...	28	12	1	12	1	...	...	16	...
Robert Street ...	71	25	...	25	...	2	...	20	...
Robert's Court ...	7	...	...	...	...	...	...	6	...
Rodney Street ...	18	4	6	2	5	...	1	9	...
Rolls Street ...	42	21	9	21	9	...	1	9	3
Ruperra Street...	16	10	8	10	8	1	...	7	...
Sandon Place ...	35	10	...	9	...	...	2	9	...
Sandon Street ...	18	5	1	5	1	2	3	5	...
Sevenoaks Street ...	38	34	13	3	9	3	1	20	...
South Morgan Street ...	33	12	5	10	3	...	2	9	...
Spencer Street ...	47	9	...	3	...	...	...	15	...
Stanley Street ...	1	...	...	...	...	...	...	1	...
Sun Street ...	8	4	...	4	...	...	1	4	...
System Street ...	73	35	2	33	1	7	2	21	...
Tin Street ...	22	9	2	9	2	3	...	8	...
Tredegear Street ...	38	12	7	10	6	2	...	19	1
Tyndall Street ...	3	...	...	...	...	...	...	...	3
Union Street ...	74	20	28	19	28	3	1	28	...
Victoria Street ...	8	3	...	3	...	...	1	4	...
Zinc Street ...	36	11	1	11	1	1	2	16	...
TOTALS ...	1,761	674	171	524	147	94	46	637	26

The notices referred to in the foregoing table were served under the Public Health Acts.

Only those houses let after the passing of the Housing, Town Planning, etc., Act, in December, 1909, at a rent not exceeding £26 a year can be dealt with under Section 15 (3) of the Act, as regards their being kept in all respects reasonably fit for human habitation.

It will be seen from Table I. that of the 845 notices served during the year 1912, 174 remained uncomplied at the end of the year ; of these 150 were served on owners, and 24 on occupiers.

Of the notices which remained uncomplied at the end of the year 1911, 222 were complied with during the year 1912— 180 by owners and 42 by occupiers.

TABLE II.

Proceedings taken relating to houses considered to be unfit for human habitation under Section 17 of the Housing, Town Planning, etc. Act, 1909, to the end of the year 1912 :—

STREET.	Houses considered to be unfit for human habitation.	Representations by the Medical Officer of Health	Closing Orders made.	Houses rendered fit for habitation after Closing Orders.	Demolition Orders made.	Houses rendered fit for habitation after Demolition Orders.	Houses Demolished.
Allen's Arch ...	3	3	3	...	3	...	...
Angelina Street ...	1	1	1	...	1	1	...
Bute Lane ...	4	4	4†	...	...	...	...
Cairns Street ...	6	6	6	...	6	6	...
Canal Street ...	2	2	2	...	2	2	...
Crown Court ...	6	6	2	...	2	...	2
Harris' Court ...	6	6	6	...	6	...	...
Little Frederick Street ...	1	1	1	...	1	1	...
Love Lane ...	2	2	2	...	2*	...	...
Madras Street ...	1	1	1	1	...	...	...
Mary Ann Street, Cottages at rear of ...	2	2	2†	...	...	...	...
Nora Street ...	2	2	2	...	2	2	...
North Loudoun Place ...	1	1	1	...	1	...	1
Roland Street ...	2	2	2	2	...	...	...
Roland Street, Rear of ...	1	1	1	...	...	...	...
Saltmead Road ...	2	2	2	...	2	2	...
Stanley Street ...	17	17	17||	...	14†	...	2
Williams' Court (Canal Street) ...	4	4	2	...	4	...	4
Womanby Street ...	5	5	5	...	5	...	1
TOTALS ...	68	68	62	3	51	14	10

* Further action deferred pending a scheme proposed by the owner for improving the locality in which the houses are situated.

† Local Authority decided not to make demolition orders provided the houses are not used for human habitation.

|| In three instances the Local Authority decided not to make demolition orders, provided the houses are not used for human habitation.

‡ In one instance the Local Authority decided not to enforce the demolition order.

TABLE III.

The following Table shows the number of habitable rooms in 2,984 houses in Cardiff, let at 10/- per week and under (inclusive), inspected during the years 1911 and 1912, and the rent paid for such houses :—

No. of Rooms.	RENT OF HOUSE PER WEEK.																											Total No. of Houses.			
	2/9	3/-	3/3	3/6	3/9	4/-	4/3	4/6	4/9	5/-	5/3	5/6	5/9	6/-	6/3	6/6	6/9	7/-	7/3	7/6	7/9	8/-	8/3	8/6	8/9	9/-	9/3		9/6	9/9	10/-
2	...	1	1	3	1	17	1	8	...	20	...	3	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59
3	1	...	6	...	...	5	...	17	7	11	5	7	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	60
4	4	2	32	2	168	31	134	9	128	29	96	49	128	19	23	4	23	1	6	...	9	1	...	...	4	902
5	2	...	5	...	29	2	25	1	48	2	80	11	91	2	31	4	34	3	11	...	14	...	6	...	6	407
6	1	8	5	65	1	59	1	97	9	239	35	266	23	109	3	110	11	44	6	95	10	21	...	38	1,256
7	2	...	2	...	2	...	6	...	32	...	19	...	30	...	50	...	62	20	13	10	26	274
8	4	...	...	...	1	...	2	...	3	10
9	1	...	...	...	8	...	1	...	2	12
10	1	...	...	...	...	...	...	...	2	3
13	1	...	1
Total No. of Houses	1	1	7	3	1	28	4	70	14	295	39	230	11	280	40	421	95	517	44	182	11	203	15	111	6	189	31	43	11	81	2,984

TABLE IV.

The following Table shows the number of habitable rooms in 952 tenements (parts of 865 houses included in Table III., which are sub-let unfurnished) and the weekly rent paid for such tenements :—

No. of Rooms.	Rent of Tenement per Week.																				No. of Tenements.
	1/-	1/3	1/6	1/9	2/-	2/3	2/6	2/9	3/-	3/3	3/6	3/9	4/-	4/3	4/6	4/9	5/-	5/6	6/-	6/6	
1	9	2	63	3	59	...	32	...	13	...	4	...	1	...	...	...	...	...	...	...	186
2	1	...	12	1	34	1	99	10	202	8	144	5	61	...	9	2	9	...	...	...	598
3	...	...	...	...	2	1	8	1	15	5	27	7	40	3	20	...	6	...	1	...	136
4	...	...	...	...	1	...	3	...	2	1	3	...	7	1	3	1	2	1	...	1	26
5	...	...	...	...	...	...	1	...	...	1	...	...	1	1	1	...	...	...	...	...	5
6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
No. of Tenements.	10	2	75	4	96	2	143	11	232	15	178	12	110	5	33	3	18	1	1	1	952

TABLE V.

The following Table shows the number of habitable rooms in 129 tenements (parts of 77 houses included in Table III., which are sub-let furnished) and the weekly rent paid for such tenements :—

No. of Rooms.	Rent of Tenement per Week.												No. of Tenements.
	2/-	2/6	3/-	3/3	3/6	4/-	4/6	4/9	5/-	5/6	6/-	7/-	
1	2	1	4	1	7	59	4	8	8	...	1	...	95
2	1	1	...	...	...	6	2	4	7	1	4	...	26
3	...	...	...	...	...	4	...	1	1	...	...	1	7
4	...	...	...	...	...	...	...	...	...	...	1	...	1
No. of Tenements.	3	2	4	1	7	69	6	13	16	1	6	1	129

TABLE VI.

HOUSE ACCOMMODATION.—The following table gives the number of houses in each Municipal Ward in Cardiff, as shewn by the enumeration made in June, 1912, by the Inspectors in the Department of the Medical Officer of Health:—

MUNICIPAL WARDS.	Houses.		In use for Business purposes.		Being Built.	Total.
	Inhabited.	Vacant.	Occupied.	Vacant.		
Central	1,805	81	670	16	10	2,582
South	1,621	72	192	3	...	1,888
Cathays	4,052	71	35	1	32	4,191
Adamsdown	1,988	31	38	...	...	2,057
Riverside	3,118	64	51	3	6	3,242
Canton	4,533	104	33	...	15	4,685
Grangetown	3,552	55	24	...	6	3,637
Roath	3,467	77	31	3	96	3,674
Park	4,585	68	95	2	3	4,753
Splott	2,973	31	32	...	...	3,036
Totals	31,694	654	1,201	28	168	33,745

The following table shews the density of the population, or the average number of persons per acre, within the City.

TABLE VII.

Density of population during the past ten years:—

Year.						Persons per acre.*
1903	...	...	...	...	...	26.4
1904	...	...	...	...	...	26.6
1905	...	...	...	...	...	26.9
1906	...	...	...	...	...	27.2
1907	...	...	...	...	...	27.5
1908	...	...	...	...	...	27.8
1909	...	...	...	...	...	28.1
1910	...	...	...	...	...	28.4
1911	...	...	...	...	...	28.6
1912	...	...	...	...	...	28.9

* Calculated on the basis of estimates of the population, and on an area of 6,373 acres.

TABLE VIII.

Number of houses and shops for which plans have been passed since 1881 :—

Period.				Period.			
August, 1881, to August, 1892				Year ended 31st August, 1903			
	...	10,973			...	398	
Year ended 31st August, 1893				1904			
	...	1,456		"	"	"	228
" " " 1894				1905			
	...	1,206		"	"	"	389
" " " 1895				1906			
	...	1,507		"	"	"	291
" " " 1896				1907			
	...	1,196		"	"	"	222
" " " 1897				1908			
	...	1,247		"	"	"	307
" " " 1898				1909			
	...	1,258		"	"	"	377
" " " 1899				1910			
	...	624		"	"	"	307
" " " 1900				1911			
	...	267		"	"	"	208
" " " 1901				1912			
	...	230		"	"	"	325
" " " 1902							
	...	185					
Total				...	...	<u>23,201.</u>	

TABLE IX.

The following table, taken from the Census Report, shows the number of buildings of various kinds in Cardiff at the time of the census enumeration, April, 1911 :—

1911.													
1901.	Buildings used as Dwellings.										Buildings not used as Dwellings.		
Total.	Total (cols. 4—11).	Ordinary Dwelling Houses.	Blocks of Flats.	Shops.	Hotels, Inns, and Public Houses.	Offices, Ware- houses, Workshops, and Factories.	Institu- tions.	Others.	Vessels, Sheds, Vagrants, &c.	Separate Flats (included in col. 5).	Kind of Building.	No.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Number inhabited	27,972	31,127	28,103	44	2,367	231	199	97	86	...	76	Places of Worship ...	159
Separate Occupiers ...	33,824	37,990	34,585	81	2,533	231	201	116	90	153	81	Government and Municipal Buildings	26
Population	164,333	182,259	160,392	356	12,442	1,874	764	4,346	487	1,598	356	Shops ...	1,178
												Offices ...	190
Uninhabited	2,975	902	753	...	135	4	6	3	1	...	1	Warehouses, Work- shops, Factories	780
Being built	148	153	148	...	4	...	1	...	...	...	...	Theatres and other places of amuse- ment	10

WATER SUPPLY.—A full account of the Cardiff Waterworks has been given in previous annual reports. It will therefore be unnecessary to enter into full details on this occasion.

I am indebted to Mr. C. H. Priestley, M.Inst. C.E., the City Waterworks Engineer, for the following information.

The water supplied to the City, and to areas beyond the City boundaries, as provided by Act of Parliament, is a pure, soft water, derived from the gathering grounds on the old red sandstone formation, to the north of the South Wales coalfield, about 35 miles from Cardiff, in the Taff Fawr Valley, Breconshire. The water is conveyed by gravitation from the storage reservoirs at Taff Fawr to the reservoirs at Llanishen and Lisvane, balancing reservoirs being placed at suitable situations along the line of the main conduit, with filter beds of sand, etc., at Rhubina and the Heath. At the latter place Candy's Polarite Filters are also in operation. The capacity of the storage reservoirs is as follows:—

Beacons Storage Reservoir	...	...	...	345,000,000	gallons.
Cantreff	"	"	...	223,000,000	"
Llanishen	"	"	...	317,000,000	"
Lisvane	"	"	...	80,000,000	"

The high level service is supplied from Rhubina, at which place the works comprise filter beds and storage reservoirs, supplemented by a service reservoir and water tower at Penylan, supplied with water by gravitation from Rhubina.

The average annual rainfall at the Brecon Beacons for the past 28 years was 77·56 inches, the total during 1912 being 93·43 inches.

The Cardiff Corporation have obtained further powers to acquire land for an additional reservoir (No. 3 or "Llwynon") at Taff Fawr to meet the requirements of the increasing population. The construction of this reservoir was commenced in November, 1910.

The drainage area in connection with the new reservoir is 6,400 acres in extent, in addition to 4,000 acres already in use, and the total storage of water in the reservoirs will amount to 2,265,000,000 gallons, including 1,200,000,000 gallons, the capacity of the new reservoir, which will be sufficient for a population of considerably over 300,000 persons, allowing for a full and unrestricted use.

The water is of excellent quality, as will be seen from the following reports:—

CHEMICAL ANALYSIS OF SAMPLES OF CARDIFF WATER.

(All results are stated in parts per 100,000).

Date Collected.	Sample.	Reaction.	Hardness.	Chlorine.	Ammonia.		Nitrates.	Oxygen Absorbed, 4 hours, 80° F.
					Free.	Albuminoid.		
1912. Decr. 10th	Heath Filter ...	Faintly Alkaline	3·4°	·8	·0006	·0064	Practically Nil.	·143
" 11th	Rhubina Filter ...	Very Faintly Alkaline	3·2°	·9	·0008	·0064	Practically Nil.	·156
" 10th	Llanishen Reservoir	Very Faintly Alkaline	3·0°	·9	·0008	·0064	Practically Nil.	·101
" 10th	Lisvane Reservoir ...	Very Faintly Alkaline	3·0°	·8	·0008	·0100	Practically Nil.	·132
" 11th	Cantreff Reservoir ...	Neutral	2·3°	·8	·0012	·0060	Practically Nil.	·200
" 10th	Beacons Reservoir ...	Neutral	2·1°	1·0	·0042	·0144	Practically Nil.	·220

BACTERIOLOGICAL EXAMINATION OF SAMPLES OF CARDIFF WATER.

Date Collected.	Sample.	Total Organisms per c.c. growing at		Relative Abundance of B. Coli.
		37° C.	20° C.	
1912.				
December 10th	Heath Filter ...	6	32	No B. Coli in 50 c.c
„ 11th	Rhubina Filter ...	176	296	Atypical B. Coli in 10 c.c.
„ 10th	Llanishen Reservoir	22	142	Typical B. Coli in 50 c.c
„ 10th	Lisvane Reservoir ...	10	128	No B. Coli in 50 c.c.
„ 11th	Cantref Reservoir ...	124	592	Typical B. Coli in $\frac{1}{2}$ c.c.
„ 11th	Beacons Reservoir ...	120	352	Typical B. Coli in 10 c.c

FOOD INSPECTION.—The inspection of meat at the Public Abattoirs has been carried out satisfactorily during the year, under the arrangements set forth in the Annual Report for 1909. Mr. P. J. Mullane, M.R.C.V.S. is the Chief Meat Inspector, with two Inspectors under his direction, each holding the Certificate for Inspectors of Meat and other Foods of the Royal Sanitary Institute. Since all the slaughtering of animals is carried on at the two municipal slaughter-houses, there is no difficulty in securing an efficient inspection of meat before it is sold for human consumption. During the year 1912, all diseased and unsound meat was voluntarily surrendered by the owners.

The Inspectors have directions to pay regard to the recommendation of the Select Committee of the House of Commons on the Tuberculosis (Animals) Compensation Bill, 1904, to the effect that, “If a butcher who is in possession of tuberculous meat has notified the fact to the proper authority as soon as he could be reasonably expected to be aware of it, the case should not be taken into Court.” The principles laid down by the Royal Commission on Tuberculosis in their report of 1898, with respect to the degree of tubercular disease which should cause a carcase or part thereof to be seized, are observed, although generally no difficulty is experienced in obtaining the owner's consent to the destruction of meat found to be unfit for food, either by reason of tuberculosis or other conditions.

Mr. G. M. McGregor, Certified Inspector of Meat and Other Foods, who was formerly a butcher, acts in the capacity of Inspector of Meat and other Foods in shops, markets and wholesale stores within the City, and assists in the inspection of meat at the slaughter-houses.

In connection with meat inspection, the facilities provided at the Public Health Laboratory are fully utilised for the purpose of diagnosis.

In the following tabular statements particulars are given with reference to diseased or unsound food dealt with during the past year and previous years.

TABLE X.

Animals slaughtered at the Municipal Slaughter-houses during the year 1912 :—

	Roath Abattoir.	Canton Abattoir.	Totals.
Cattle	6,833	728	7,561
Sheep and Lambs	35,813	5,057	40,870
Calves	5,331	257	5,588
Pigs	21,399	3,845	25,244
Totals	69,376	9,887	79,263

TABLE XI.

Unsound carcases of meat surrendered at Abattoirs and destroyed by arrangement with the owners :—

Place.	Carcases of				Totals.
	Beef.	Mutton and Lamb.	Veal.	Pork.	
Roath Abattoir ...	36	47	13	47	143
Canton Abattoir ...	1	16	...	14	31
Totals ...	37	63	13	61	174

TABLE XII.

Causes of destruction of carcases :—

Cause.	Beef.	Mutton and Lamb.	Veal.	Pork.	Totals.
Actinomycosis	1	...	...	...	1
Anaemia ... ..	...	1	...	...	1
Asphyxiation	1	3	2	...	6
Decomposition ... ..	...	1	...	...	1
Dropsy ... ..	...	18	...	1	19
Emaciation	1	2	...	...	3
Emaciation and Dropsy ... ..	...	19	...	...	19
Found Dead ... ..	...	12	2	3	17
Jaundice ... ..	...	1	...	1	2
Peritonitic Hernia ... ..	...	...	...	1	1
Peritonitis ... ..	...	1	...	2	3
Pneumonia ... ..	...	1	...	...	1
Prematurity ... ..	...	...	2	...	2
Pyæmia ... ..	...	...	1	...	1
Rheumatism ... ..	...	1	...	...	1
Rheumatoid Arthritis	1	...	...	...	1
Traumatism ... ..	...	3	...	...	3
Tuberculosis	33	...	6	53	92
Totals	37	63	13	61	174

TABLE XIII.

Approximate weight of diseased or unsound meat surrendered at Abattoirs and destroyed by arrangement with the owners :—

	Whole Carcases.			Part Carcases.			Offals.			Totals.		
	tons. cwt. lbs.			tons. cwt. lbs.			tons. cwt. lbs.			tons cwt. lbs.		
Beef	9	4	25	2	11	81	8	5	56	20	1	50
Veal	0	7	56	0	0	29	0	3	108	0	11	81
Mutton and Lamb ...	0	17	57	0	1	29	1	13	2	2	11	88
Pork	2	14	94	0	15	60	1	11	57	5	1	99
Totals	13	4	8	3	8	87	11	13	111	28	6	94

TABLE XIV.

Approximate weight of diseased or unsound food surrendered at shops and stores, and destroyed or otherwise dealt with by arrangement with the owners :—

	tons cwt. lbs.		
Beef	5	13	3
Veal	0	2	91
Mutton and Lamb ...	0	13	94
Pork	0	17	80
Poultry	0	1	71
Rabbits	0	5	51
Fish	8	11	20
Provisions	17	3	40
Vegetables	28	19	70
Fruit	14	16	0
Nuts	0	7	16
Total	77	11	88

In addition to the foregoing, 150 oysters, 1,663 gallons of milk, 277 gallons of skimmed milk, and 3 gallons of egg-liquid were destroyed.

TABLE XV.

Approximate weight of diseased or unsound food destroyed or otherwise dealt with, either by consent of the owners, or by Magistrates' Orders, in each year since 1896 :—

Year.	Food.			Year.	Food.		
	tons.	cwt.	lbs.		tons.	cwt.	lbs.
1896	1	14	88	1905	18	7	108
1897	4	16	72	1906	21	16	77
1898	4	8	73	1907	24	3	84
1899	6	6	93	1908	65	4	54
1900	9	9	49	1909	73	6	12
1901	15	0	96	1910	76	12	8
1902	19	9	107	1911	90	17	80
1903	18	12	46	1912	105	18	70
1904	18	11	54				

TABLE XVI.

Number of animals slaughtered, and the number and proportion per cent. condemned at the Municipal Slaughter-houses during each of the years 1902 to 1912 :—

				Year.	Number of Animals Slaughtered	Number of Animals Condemned	Percentage Condemned
Roath	1902	73,528	66	0-09
Canton	...	...	...	"	11,518	9
Total	...	...	...	...	85,046	75
Roath	1903	69,146	72	0-09
Canton	...	...	...	"	12,112	5
Total	...	...	...	...	81,258	77
Roath	1904	74,550	80	0-10
Canton	...	...	...	"	11,154	8
Total	...	...	...	...	85,704	88
Roath	1905	70,076	74	0-10
Canton	...	...	...	"	10,482	10
Total	...	...	...	...	80,558	84
Roath	1906	67,155	94	0-14
Canton	...	...	...	"	10,428	14
Total	...	...	...	...	77,583	108
Roath	1907	68,845	81	0-11
Canton	...	...	...	"	10,888	9
Total	...	...	...	...	79,733	90
Roath	1908	71,212	103	0-13
Canton	...	...	...	"	10,284	7
Total	...	...	...	...	81,496	110
Roath	1909	77,572	102	0-13
Canton	...	...	...	"	9,866	15
Total	...	...	...	...	87,438	117
Roath	1910	72,628	116	0-15
Canton	...	...	...	"	8,911	8
Total	...	...	...	...	81,539	124
Roath	1911	73,250	141	0-18
Canton	...	...	...	"	8,648	8
Total	...	...	...	...	81,898	149
Roath	1912	69,376	143	0-22
Canton	...	...	...	"	9,887	31
Total	...	...	...	...	79,263	174

SALE OF FOOD AND DRUGS ACTS.—Samples submitted for analysis during the year 1912 to the Public Analyst, Mr. Thomas Hughes, F.I.C. :—

TABLE XVII.

Description.	Number Analysed.	Genuine.	Adulterated.
Arrowroot	12	12	...
Baking Powder	12	11	1
Beer	6	6	...
Bread	6	6	...
Butter	1	...	1
Butter (informal)	49	46	3
Cheese	6	6	...
Coffee	12	12	...
Cornflour	9	9	...
Cream (raw)*	6	3	3
Flour	6	5	1
Flour (self-raising)	15	14	1
Ginger	3	3	...
Ginger (ground)	3	3	...
Lard	18	18	...
Margarine	18	18	...
Milk	580	519	61
Milk (skimmed)... ..	2	1	1
Pepper	12	12	...
Rice	6	6	...
Tea	6	6	...
Vinegar	12	5	7
Totals	800	721	79

* Samples taken under the Public Health (Milk and Cream) Regulations, 1912.

TABLE XVIII.

Legal proceedings under the Sale of Food and Drugs Acts :—

No. of Sample.	Description.	Percentage of Adulteration.	Fines.	Remarks.
9	Milk	5·3% of added water and 11% deficient fat	To pay costs (8/-)	Dismissed.
51	"	9% deficient fat	—	
64	"	17·3% deficient fat	Fined 5/- and costs (6/-)	
65	"	19·7% deficient fat	Fined 5/- and costs (5/6)	
84	Milk (skimmed)	40·6% of added water	Fined £5 and costs (6/-)	Dismissed—warranty. Wife of defendant fined 1/- including costs.
92	Milk	10·0% deficient fat	Fined £5 and costs (5/-)	
104	"	3·2% of added water	—	
120	"	24·7% of added water	Fined £2 and costs (5/-)	

TABLE XVIII.—continued.

No. of Sample.	Description.	Percentage of Adulteration.	Fines.	Remarks.
145	Milk ...	4.3% deficient fat ...	To pay costs (5/-)	
161	"	5% of added water ...	Two defendants— each fined 10/- and costs (one 5/9 and one 3/9)	
171	"	21.5% of added water ...	Fined £20 and costs (6/-)	
179	"	5.9% of added water ...	—	Withdrawn; defendants emigrated.
193	"	3.3% deficient fat ...	To pay costs (9/6)	
200	"	7.7% deficient fat ...	...	Dismissed.
206	"	3.3% of added water ...	Fined £5 and costs (£1 3s.)	
217	"	10.3% deficient fat ...	...	Cautioned.
218	"	3.7% deficient fat ...	Fined £2 and costs (8/6)	
223	"	7% deficient fat ...	...	Cautioned.
224	"	18% deficient fat ...	...	Cautioned.
225	"	4.3% deficient fat ...	...	Cautioned.
250	"	6% deficient fat ...	...	Cautioned.
251	"	5.7% deficient fat ...	...	Cautioned.
317	"	11.0% deficient fat ...	...	Dismissed—warranty.
333	"	6.3% deficient fat ...	£2 and costs (5/6)	Two defendants— one cautioned.
341	"	5.3% deficient fat ...	£5 and costs (7/6) and 1/- includ- ing costs	Two defendants
342	"	9.0% deficient fat ...	£5 and costs (12/-)	
351	"	7.3% deficient fat ...	...	Dismissed.
352	"	9.7% deficient fat ...	£10 and costs (9/-)	
373	"	2.8% of added water and 6% deficient fat	To pay costs (5/6)	
384	"	14.0% deficient fat ...	...	Dismissed.
391	"	22.0% deficient fat ...	To pay costs (8/-)	Two defendants, 4/- each.
393	"	7.0% deficient fat ...	£1 and costs (8/6)	Two defendants, 10/- and costs (4/3) in each case.
399	"	0.01% of boric acid ...	£20 and costs (£1 14s.)	
411	"	10% deficient fat ...	10/- and costs (8/-)	
428	"	11% deficient fat ...	To pay costs (11/-)	Two defendants— 6/- and 5/- respectively.
527	"	5% deficient fat ...	...	Cautioned.
625	"	6.7% deficient fat ...	£2 and costs (14/-)	
660	Baking Powder	Excess of 16% of calcium sulphate	5/-	Including costs.
710	Milk ...	12.2% added water ...	£2 and costs (5/6)	
717	"	13.3% deficient fat ...	£5 and costs (7/-)	
730	Butter	90% of margarine ...	To pay costs (5/6)	
772	Milk ...	13.7% deficient fat ...	£1 and costs (12/6)	Two defendants—each fined 10/- and costs.
786	"	8.5% added water ...	To pay costs (5/6)	

TABLE XIX.

In the following cases legal proceedings were not taken :—

No. of Sample.	Description.	Percentage of Adulteration.	Remarks.
2	Milk ...	2% of added water ...	—
3	" ...	2% of added water ...	—
5	" ...	1% of added water ...	—
10	" ...	1% of added water ...	—
11	" ...	2% of added water ...	—
49	" ...	2% deficient fat ...	—
55	" ...	1.7% of added water ...	—
95	" ...	1.8% of added water ...	—
117	" ...	1% of added water ...	—
153	" ...	4.5% of added water ...	Disclosure made to Inspector.
227	" ...	2% deficient fat ...	—
246	" ...	2% of added water ...	—
245	" ...	Minute trace of boric acid ...	—
272	" ...	2% of added water ...	—
430	" ...	1% deficient fat ...	—
435	Vinegar ...	90% of diluted and coloured acetic acid	Disclosure made to Inspector.
436	" ...	Consisted entirely of diluted and coloured acetic acid	Legal proceedings not recommended.
438	" ...	Consisted entirely of diluted and coloured acetic acid	
453	Milk ...	14% of added water ...	Disclosure made to Inspector.
457	Vinegar ...	Consisted entirely of diluted and coloured acetic acid, and deficient in acetic acid to the extent of 33 per cent.	Legal proceedings not recommended.
458	" ...	Consisted entirely of diluted and coloured acetic acid	
460	" ...	Consisted entirely of diluted and coloured acetic acid, and deficient in acetic acid to the extent of 17%.	
462	" ...	Deficient in acetic acid to the extent of 56%	
471	Milk ...	1.7% deficient fat ...	—
542	Flour ...	2.5 parts of nitrites per million parts of flour	Legal proceedings not recommended.
654	Milk ...	2.3% deficient fat ...	—
655	" ...	2% deficient fat ...	—
676	Butter ...	100% of margarine ...	Informal sample
695	" ...	1.2% excess of water ...	Informal sample
724	" ...	100% of margarine ...	Informal sample
750	Self-raising Flour ...	0.58% excess of calcium sulphate.	Proceedings not recommended.
768	Milk ...	1% of added water ...	—
779	" ...	1% of added water ...	—

TABLE XIX.—continued.

No. of Sample.	Description.	Percentage of Adulteration.	Remarks.
793	Raw Cream ...	0·25% of boric acid ; receptacle in which cream was deposited and vessel in which cream was sold not bearing declaratory labels.	Samples taken under the Public Health (Milk and Cream) Regulations, 1912. Written explanations received, and Local Authority cautioned the offenders.
795	" " ...	0·26% of boric acid ; vessel in which cream was sold not being properly labelled.	
796	" " ...	0·27% of boric acid ; receptacle in which cream was deposited for sale not bearing a declaratory label.	

Legal proceedings are not taken in cases of milk in which the percentage of adulteration is small, and generally when the amount of added water is less than 5%.

TABLE XX.

Other legal proceedings under the Sale of Food and Drugs Acts :—

Offence.	Fines.	Remarks.
False warranty <i>re</i> milk (Sample No. 104) ...	—	Dismissed
False warranty <i>re</i> milk (Sample No. 317) ...	—	Dismissed
Margarine sold in wrapper not being labelled "Margarine"	To pay costs (5/6)	—

TABLE XXI.

Samples of milk analysed and proportion adulterated :—

	Samples Analysed.	SAMPLES ADULTERATED.					
		Num- ber.	Per- centage.	Added Water	Defi- cient Fat.	Added Water and Defi- cient Fat.	Preserv- atives.
WHOLESALE—							
Taken at Railway Stations ...	120	...	...	...	...	...	...
RETAIL—							
Taken in shops, from carts, &c. ...	462	62	13·4	23	35	2	2
Totals ...	582	62	10·6	23	35	2	2

FACTORY AND WORKSHOP ACT, 1901.—Under Section 132 of the Factory and Workshop Act, 1901, the Medical Officer of Health is required in his annual report to deal specifically with the administration of the Act (so far as the matters under the charge of the Sanitary Authority are concerned), and to send a copy of this report to the Secretary of State.

“Factories” include all places in which mechanical power is used in aid of the manufacturing processes, and certain other industries specified in Part I. of Schedule VI. to the Act, whether mechanical power is used or not. The duty devolving upon the Health Department in connection with factories is confined to the enforcement of Section 22 of the Public Health Acts Amendment Act, 1890, relating to the provision of suitable and sufficient sanitary conveniences. The inspections of factories referred to in the tables were in connection with this duty. The Workshop Inspectors made 972 inspections of factories during the year, and 83 notices were served.

“Workshops” include premises (not being factories) in which manual labour is exercised by way of trade or for purposes of gain in, or incidental to, the making, altering, repairing, finishing, or adapting for sale any article, and to or over which the employer of the persons working there has the right of access or control. The inspections of such premises during the year amounted to 4,081. The number of notices served in cases where sanitary defects were found was 388.

“Workplaces,” although not defined in the Act, include any place where work is done permanently, and where people assemble together to do work permanently of some kind or another, such as stables, kitchens of restaurants, &c. The number of inspections of such places made during the year amounted to 486, and 55 notices were served.

Underground bakehouses are dealt with by special provisions of the Factory and Workshop Act, 1901. It is provided in Section 101 of the Act, that no underground bakehouse shall be used as such unless it was so used at the time of the passing of the Act, and that after the 1st January, 1904, no underground bakehouse (whenever established) may be used unless the Sanitary Authority is satisfied that it is suitable for the purpose in all respects, and has granted a certificate of suitability. A bakehouse is deemed to be an underground bakehouse if any room used for baking, or for any purpose incidental thereto, is so situate that the surface of the floor is more than three feet below the surface of the footway of the adjoining street or of the ground adjoining or nearest to the room. There are four underground bakehouses in Cardiff for which certificates have been granted.

One hundred and twenty-four lists of outworkers were received, giving the names and addresses of 260 work-people engaged in home work, and 663 inspections were made of outworkers' premises. In 53 instances sanitary defects were discovered, and notices were served in these cases. Great importance is attached to the inspection of places in which these outworkers are engaged, the object being to prevent unwholesome conditions or nuisances injurious to the health of the workers. Sections 107–115 of the Act of 1901 give power to the Local Authority to prohibit work being done by outworkers (1) in dwellings which are injurious or dangerous to the health of the workers themselves, *e.g.*, through overcrowding, want of ventilation, or other insanitary conditions, and (2) in premises where there is dangerous infectious disease. Nuisances found upon these premises were abated in the ordinary way under the provisions of the Public Health Acts and Sanitary Byelaws. In three instances infectious disease was found upon the premises of outworkers, and orders were made prohibiting the occupiers of workshops from giving out work to persons living upon the infected premises until certified to be free from infection.

The Inspectors of Workshops made altogether 6,202 visits of inspection to factories, workshops, &c. during the year. 579 notices regarding nuisances or sanitary defects were served, and 607 notices were complied. Details of the work carried out under the Act are set forth in Tables XXII. to XXIV. in this report.

The following statement is prepared by request of the Secretary of State.

TABLE XXII.

1.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.

PREMISES.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (including Factory Laundries)	972	83	—
Workshops (including Workshop Laundries)	4,081	388	—
Workplaces (other than Outworkers' premises included in Part 3 of this Report)	486	55	—
Total	5,539	526	—

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

PARTICULARS.	Number of Defects		
	Found.	Remedied.	
Nuisances under the Public Health Acts :—			
Want of cleanliness	180	190	
Want of ventilation	15	14	
Overcrowding	2	2	
Want of drainage of floors	1	—	
Other nuisances	375	402	
Sanitary accommodation ... {	insufficient	9	13
	unsuitable or defective	52	72
	not separate for sexes	3	1
Breach of special sanitary requiremenrs for bakehouses (Sec. 97 to 100)	56	56	
Total	693	750	

In the foregoing table, where the number of defects remedied exceed those found, the defects were found in 1911 and remedied in 1912.

3.—HOME WORK.

[illegible]

4.—REGISTERED WORKSHOPS.

Workshops on the Register (S. 131) at the end of the Year.	Number.
Bakers	174
Bootmakers	184
Dressmakers and Milliners	221
Laundries	46
Tailors	94
Miscellaneous	518
Total number of Workshops on Register ...	1,237

5.—OTHER MATTERS.

CLASS.	Number.
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (Sec. 133) ...	46
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts but not under the Factory Act :—	
Notified by H.M. Inspector	22
Reports (of action taken) sent to H.M. Inspector	21
Other (Notices of Occupation of Workshops received from H.M. Inspector) ...	134
Underground Bakehouses in use at the end of the year	4

TABLE XXIII.

Factories and workshops on the registers at the end of the year 1912, the number of inspections made, and the number of notices served during the year :—

	Number on Registers.	Number of Inspections.	Number of Notices Served.
WORKSHOPS :—			
Bakers	174	972	90
Bootmakers	147	426	37
Dressmakers and Milliners	181	374	26
Laundries	43	242	21
Tailors	81	322	45
Miscellaneous	480	1,486	143
DOMESTIC WORKSHOPS :—			
Bootmakers	37	107	11
Dressmakers and Milliners	40	61	5
Laundries	3	4	1
Tailors	13	14	2
Miscellaneous	38	73	7
WORKPLACES :—			
Miscellaneous	312	486	55
OUTWORKERS' PREMISES :—			
Tailors	228	628	48
Miscellaneous	14	35	5
FACTORIES :—			
Bakers	24	95	2
Bootmakers	15	44	4
Laundries	18	47	2
Miscellaneous	381	786	75
Totals	2,229	6,202	579

TABLE XXIV.

NUISANCES IN FACTORIES, WORKSHOPS, &c. DURING THE YEAR 1912.

NUISANCES.	Bakehouses.		Bootmakers' Premises.		Dressmakers' and Milliners' Premises.		Laundries.		Tailors' Premises.		Outworkers' Premises.		Miscellaneous.		Totals.	
	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied
Want of cleanliness ...	56	56	14	16	10	11	10	12	24	25	9	8	122	126	245	254
Want of ventilation ...	—	—	—	1	4	4	2	1	6	6	5	4	3	2	20	18
Overcrowding ...	—	—	1	1	1	1	—	—	—	—	—	—	—	—	2	2
Want of drainage of floors ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—
Sanitary { Insufficient	1	2	1	—	—	—	—	—	—	—	—	—	7	11	9	13
Accom- { Unsuitable or defective	—	—	2	3	3	6	—	—	7	6	6	5	40	57	58	77
modation { Not separate for sexes ...	—	—	—	—	—	—	—	—	—	—	—	—	3	1	3	1
Defective or choked drains ...	11	11	8	7	8	9	5	5	7	6	14	12	39	46	92	96
Defective syphon traps ...	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1	1
Defective gully traps ...	3	1	—	—	—	—	2	2	—	—	—	—	11	23	16	26
Want of flushing apparatus ...	—	2	—	—	—	—	1	2	1	—	1	2	10	13	13	19
Defective flushing apparatus ...	4	4	5	4	2	2	4	4	2	3	5	5	18	17	40	39
Defective yard surfaces ...	3	4	2	2	4	3	1	1	2	1	8	7	13	14	33	32
Offensive accumulations ...	3	2	4	4	1	1	3	4	3	3	3	4	25	24	42	42
Want of manure receptacles ...	—	1	—	—	—	—	—	—	—	—	—	—	1	1	1	1
Defective manure receptacles ...	1	1	—	—	—	—	—	—	—	—	—	—	1	1	2	2
Other nuisances ...	25	24	37	38	13	15	4	7	12	8	33	29	75	82	199	203
Totals ...	107	107	74	76	46	52	32	38	64	58	84	76	270	419	777	826

SHOPS ACT, 1912.—This Act, which came into operation on 1st May, 1912, repealed the Shops Regulation Acts, 1892–1911. Amongst other provisions, it reproduces without change of substance, the provisions of previous Acts dealing with shops, from the Shop Hours Act, 1892, down to and including the Shops Act, 1911.

HALF HOLIDAY FOR SHOP ASSISTANTS.—The Act provides that every shop assistant in every class of shop must be allowed a half-holiday, which must begin not later than 1.30 p.m. on a week day, once a week, and the employer is required to put up a notice in his shop, in a position where everyone affected can easily see and read it, stating the day or days on which each assistant is to have his half holiday.

MEAL TIMES.—Employers are required to give intervals to their shop assistants for meals and rest as follows :—

Dinner.—If the hours of employment include the hours from 11.30 a.m. to 2.30 p.m., each assistant must be allowed an interval of $\frac{3}{4}$ hour for dinner *within that time* if he takes the meal on the shop premises, or an interval of a full hour if he does not take the meal on the shop premises.

Tea.—If the hours of employment include the hours from 4 p.m. to 7 p.m., each assistant must be allowed an interval of $\frac{1}{2}$ hour for tea *within that time*.

Other Intervals.—No shop assistant may be employed for more than six hours without being allowed an interval of at least 20 minutes.

For instance, if an assistant begins work at 7 a.m., and does not get his dinner till 1.30 p.m., he must be allowed, in addition to the dinner interval, an interval of 20 minutes in the course of the morning. He must be allowed a similar interval on the day of his half holiday, if he begins at 7 and goes on to 1.30.

HOURS OF EMPLOYMENT OF YOUNG PERSONS UNDER 18.—It is provided also that young persons under the age of eighteen years of age must not be employed in or about the business of a shop for a longer period than seventy-four hours (including meal times) in any one week. This means not only employment actually on or about the shop premises, but also employment in connection with the business of the shop generally. Every shopkeeper who employs young persons in his shop must post a notice in a conspicuous place in the shop stating the number of hours in the week during which the young persons may be lawfully employed in the shop.

SEATS FOR FEMALE SHOP-ASSISTANTS.—Provision is made whereby employers are required to provide seats behind the counter or in some other suitable position in every room in which female assistants are employed in serving customers. Not less than one seat must be provided for every three female assistants employed in each room.

CLOSING OF SHOPS ; WEEKLY HALF HOLIDAY.—Every shop must be closed for the serving of customers after 1 p.m. on one week-day in every week, unless it is exempted on one of the grounds mentioned below.

The day on which a shopkeeper must close his shop for the half holiday will depend on whether an Order has been made by the local authority or not for shops of the class to which it belongs. If no Order has been made, the shopkeeper will choose his own day ; having chosen it, he must put up a notice in his shop stating what day he has chosen, and he must not alter the day oftener than once in three months.

If, however, an Order has been made for his class of trade, the shopkeeper will have to comply with it, but no order can be made for any class of shops unless the occupiers of a majority of the shops of that class approve.*

* It should be noted that provisions as to a half holiday in Closing Orders under the Shops Hours Act, 1904, will cease to have effect on and after 1st May, 1912, when the new Act comes into force, except in the case of shops which are not required by the new Act to close for a weekly half holiday. Unless an Order has been made by the local authority under the new Act fixing the day of the weekly holiday for the class of shop which he occupies, it will be open to each shopkeeper to choose his own day for early closing, as explained above.

The local authority have full power to make their Orders suit the requirements of all the different classes of trade and interests affected. They may fix different days for different trades ; different days in different parts of the district ; different days during different seasons of the year. For instance, in the same town, the weekly half holiday might be fixed for ironmongers on Tuesday, and for drapers on Thursday ; or again an Order might be made fixing Thursday as the half holiday for drapers in one part of the town and Tuesday in another part ; or again Tuesday for all or certain trades in the summer, and Thursday during the rest of the year.

A further and very important provision is that every Order must allow two alternative days for the half holiday, one of which will be Saturday. If the early closing day fixed by the Order is Wednesday, for example, the Order must give shopkeepers the option of closing on Saturday instead ; or if Saturday is fixed as the early closing day, the Order must also fix some other week-day on which shopkeepers may close early, if they wish, instead of on the Saturday.

A shopkeeper who avails himself of the option to close on the alternative day must put up a notice to that effect in his shop.

The expression "*closed for the serving of customers*" implies that some steps must be taken to prevent customers entering. This would usually be done by closing the shop door, but if it should be necessary to open it for some purpose not connected with the serving of customers, *e.g.*, for cleaning the shop or as the only entrance to a living room, it should be clearly shown by putting up shutters, covering up goods, &c., that the shop is no longer open for the serving of customers. Any customers, however, may be served who are actually in the shop at the time of closing, but no fresh customers may be admitted after that time. Other work, such as putting away goods, sending out goods for which the orders were received *before* the closing hour, making up accounts, &c., may be done after the closing hour ; it should be noted, however, that the assistants, if they are given their half holiday on the day on which the shop is closed for a half holiday, must not be detained on that day for the purpose of doing such work after 1.30 p.m. To receive and execute orders after the closing hour, whether the orders are given personally or by post or telephone, would be keeping the shop open for the serving of customers, and is not permissible.

EXCEPTIONS.—(i) Certain classes of shops are not required to close for a weekly half holiday† These classes are as follows :—

The sale by retail of intoxicating liquors.

The sale of refreshments, including the business carried on at a railway refreshment room.

The sale of motor, cycle, and air-craft supplies and accessories to travellers.

The sale of newspapers and periodicals.

The sale of meat, fish, milk, cream, bread, confectionery, fruit, vegetables, flowers, and other articles of a perishable nature.

The sale of tobacco and smokers' requisites.

The business carried on at a railway bookstall on or adjoining a railway platform.

The sale of medicines and medical and surgical appliances.

Retail trade carried on at an exhibition or show, if the local authority certify that such retail trade is subsidiary or ancillary only to the main purpose of the exhibition or show.

(ii) If the local authority are satisfied that the majority of the shopkeepers of any particular class in any area wish to be exempted from the obligation to close on the weekly half holiday, they must make an Order exempting shops of that class in that area. Similarly, if the majority wish to keep open on the half holiday up to 2 p.m. or some time between 1 p.m. and 2 p.m., the local authority must make an Order altering the hour accordingly.

† But if a two-thirds majority of the shopkeepers in any of these classes desire a weekly half holiday, the local authority may make an Order requiring shops of that class to close for a weekly half holiday.

The local authority may refuse, however, to make an Order, if they consider that the area for which it is asked is unreasonably small.

It should be noted, that even when such an Order has been made and a shopkeeper is not required to close early, he must still give his assistants their half-day's holiday each week ; so also must a shopkeeper whose shop belongs to one of the exempted classes mentioned above.

(iii) In holiday resorts the Local Authority may make an Order suspending the weekly half holiday for a period or periods not exceeding four months altogether. For instance, the half holiday might be suspended for the whole of the summer, or in a town where there is both a summer and winter season, an Order might be made for two summer months and two winter months, during which times the shops affected by the Order would not be required to close on the weekly half holiday. (As to the suspension of the assistants' half holiday during these periods, an employer who satisfies the local authority that he gives his assistants a holiday on full pay of not less than two weeks during the year and posts a notice to that effect in his shop, need not give his assistants a half holiday during the time the Order is in operation).

(iv) Even when shops are required to be closed for the weekly half holiday, customers may be served with any articles required in a case of illness. Customers may also be served with victuals, stores and other necessities for a ship on her arrival in a port or immediately before her departure from a port.

(v) If a shop is closed during the whole of a Bank Holiday, and the Bank Holiday does not fall on the day fixed for the weekly half holiday, the shopkeeper may keep his shop open *either* on the half holiday before *or* on the half holiday after the Bank Holiday. For instance, if he had fixed Thursday as the day for his weekly half holiday and Boxing Day fell on a Tuesday, then, provided he kept his shop closed throughout Boxing Day, he could keep it open either on the Thursday afternoon before or the Thursday afternoon after Boxing Day.

CLOSING ORDERS.—The local authority have power to make an Order for any class of shop, with the consent of the occupiers of two-thirds of the shops of the class, fixing the hour on each day of the week (other than the half holiday) at which the shops are to close. The hour fixed must not be earlier than 7 p.m. Where such an Order has been made by the local authority fixing the closing hours for any class of trade, every shopkeeper carrying on trade of that class must close his shop for the serving of customers at the hours so fixed.

EXCEPTIONS.—Closing Orders cannot apply to the following classes of business :—

Post Office business.

The sale of medicines and medical and surgical appliances.

The sale by retail of intoxicating liquors for consumption on or off the premises.

The sale of refreshments for consumption on the premises.

The sale of tobacco and other smokers' requisites.

The sale of newspapers.

The business carried on at a railway bookstall or a railway refreshment room.

NOTE AS TO MIXED SHOPS.—When a shopkeeper carries on several trades or businesses in his shop, some of which are required to be closed on a half holiday or at fixed hours on other days of the week, while some are not, he will be allowed to keep his shop open after the closing hour for the trades or businesses not required to be closed—but *for these only* : and he will have to comply with any conditions that may be laid down by the Home Office or the local authority.

The Home Office has laid down the following conditions for cases where a shop is kept open on a half holiday for one of the exempted trades :—

(1) A notice in the following words :—

" THIS SHOP IS CLOSED FOR TO-DAY EXCEPT FOR THE TRADE OR BUSINESS OF [] " must be exhibited in the shop after the closing hour on the day of the weekly half holiday—whether the day is fixed by the shopkeeper himself or by an Order of the local authority. This notice must be in letters not less than two inches high, and must be posted in some conspicuous places both outside and inside the shop:

(2) So far as is reasonably practicable, no goods in connexion with the trade or business required to be closed must be exhibited either inside or outside the shop.

Similar conditions may be laid down by local authorities in their closing orders.

APPLICATION OF CLOSING PROVISIONS TO PERSONS TRADING IN THE STREETS, &C.—No class of trade may be carried on in the streets or in any other place at times when it is not permitted to carry on that class of trade in a shop. Thus, if there is a closing order for jewellers' shops, the sale of jewellery after the closing hour will be prohibited not only in shops but also in the streets by pedlars, or in stalls and booths which are not regular premises for carrying on the trade in question.

The sale of newspapers, an auction sale of private effects in a private house, the attendance on a customer at his private residence by a barber, and sales at fairs and bazaars, are specially exempted from the above provision.

Section 13 (1) of the Shops Act, 1912, provides that it shall be the duty of every local authority to enforce within their district the provisions of this Act, and of the orders made thereunder or under any enactment repealed by this Act, and for that purpose to institute and carry on such proceedings in respect of failures to comply with or contraventions of this Act, and such orders as aforesaid as may be necessary to secure the observance thereof, and to appoint inspectors; and an inspector so appointed shall, for the purposes of his powers and duties, have in relation to shops all the powers conferred in relation to factories and workshops on inspectors by Section 119 of the Factory and Workshop Act, 1901, and that Section and Section 121 of the same Act shall apply accordingly; and an inspector may, if so authorised by the local authority, institute and carry on any proceedings under this Act on behalf of the authority.

In view of the extensive and additional duties which devolved upon the Department of the Medical Officer of Health under the provisions of this Act, two new Inspectors were appointed in June, 1912. The Chief Inspector of Nuisances, Mr. Samuel Evans, was appointed with powers and duties under the Act, and to supervise the work of the other Inspectors. Two Assistant Inspectors who were carrying out duties in connection with the Shop Hours Acts, 1892–1904, and the sanitary inspection of workshops under the Factory and Workshop Act, 1901, were also appointed as inspectors under the Shops Act, 1912. The inspection of shops is therefore being carried out by the Chief Inspector and four Assistant Inspectors; the latter also devote part of their time to the inspection of workshops.

With reference to Orders fixing the day on which shops are to be closed for the weekly half holiday, registers of all the classes of shops affected were made, and votes of the various classes of shops were taken in the prescribed manner. An Order was made fixing Wednesday in every week as the day on which all shops to which the Order applies shall be closed for the serving of customers not later than one o'clock in the afternoon; Saturday may be substituted for Wednesday as respecting a shop in which notice to that effect is affixed by the occupier. This Order affects seven classes of shops.

All shops of Undertakers and Funeral Furnishers within the City and sixteen classes of shops in the South Ward have been wholly exempted from the provisions of Section 4 of the Act, which provides that every shop shall be closed for serving of customers not later than one o'clock on one week day in each week.

All other shops affected by the provisions of the Act as regards the closing on the weekly half holiday have to be closed on one half day in every week, and the occupier must specify the day chosen by notice affixed in his shop, and the day must not be changed oftener than once in three months.

With reference to Closing Orders fixing the hour on each day of the week (other than the half holiday) at which the shops are to close, two Orders have been made, one affecting all Pharmacists, Chemists, &c., within the City, and the other affecting Ironmongers, &c., in the Park Ward only. Ten Closing Orders were made prior to the passing of the Shops Act, 1912, under the Shop Hours Act, 1904, so that at present there are altogether twelve such Closing Orders in operation.

The number of visits paid to shops during the year as regards registration amounted to 4,459. The visits of inspection of shops totalled 5,965. As to closing of shops on the weekly half holiday, 2,222 observations of shops were made, and 1,365 observations were made in connection with closing of shops under Closing Orders fixing the hours of closing.

Legal proceedings were taken in ten cases of infringements. Six defendants were cautioned, three ordered to pay costs, and one fined five shillings and costs.

SANITARY INSPECTION OF DISTRICT.—The general sanitary inspection of the district, inspection of factories and workshops, inspection of shops under the Shop Hours Acts, inspection of seamen's and common lodging houses, the inspection of meat and other food in shops and stores, and the taking of samples for analysis under the Sale of Food and Drugs Acts, is carried out by Mr. S. Evans, Chief Inspector of Nuisances, with the assistance of fourteen Assistant Inspectors.

For the purposes of inspection, the city is divided into six districts, as follows :—

- District No. 1.—Canton and Riverside Wards.
- „ No. 2.—Splott Ward and part of Adamsdown Ward.
- „ No. 3.—Park Ward and part of Cathays Ward.
- „ No. 4.—Central Ward and parts of Cathays and South Wards.
- „ No. 5.—Grangetown Ward and part of South Ward.
- „ No. 6.—Roath Ward and part of Adamsdown Ward.

The following statement, in addition to other tables in this report, shows the nature and extent of the work performed by the Chief Inspector and his Assistants.

SUMMARY OF SANITARY INSPECTION OF DWELLING HOUSES, &c. DURING THE YEAR 1912 :—

Complaints of nuisances received	...	...	...	...	739
Houses, etc. inspected	...	...	...	...	3,682
House-to-house inspections (including testing of drains)	...	...	...	...	1,737*
Re-inspections of houses, etc.	...	...	...	...	20,498
Drains tested with smoke	...	...	...	...	679
„ „ chemicals	...	...	...	...	1,126
Notices served :—					
Informal	...	...	...	...	2,717*
Statutory	...	...	...	...	142*
Notices complied :—					
Informal	...	...	...	...	2,964*
Statutory	...	...	...	...	131*
Towns Improvement Clauses Act, 1847 :—					
Notices <i>re</i> defective shutters served	...	...	...	...	383
„ „ „ complied	...	...	...	...	416

* Including inspections and notices, particulars of which are given in Table I.,
page 11 and 12.

In connection with the sanitary inspection of dwelling houses, 6,363 sanitary defects were remedied, details of which are given below :—

Drains unchoked and repaired	1,054
Soil pipes, ventilation shafts and fresh air inlets repaired	69
New W.C pans provided	113
New syphon traps provided	19
New gully traps provided	31
W.C.s repaired	181
W.C.s cleansed	186
Flushing apparatus provided	4
" " repaired	54
Trough outlets repaired	108
Roofs repaired	775
Shutes repaired	612
Down-pipes repaired	98
Chimneys repaired	83
Inside plastering repaired	217
Outside	244
Areas repaired	44
Yard surfaces repaired	524
Yards, &c. cleansed	32
Outhouses cleansed or repaired	59
Accumulations removed	141
Manure receptacles provided	10
" " repaired	5
Boundary and party walls repaired	102
Doors repaired	63
Floors repaired	363
Windows repaired	493
Ceilings repaired	68
Houses, bedding, &c., cleansed	191
Ventilation improved	13
Water supply provided	50
Overcrowding abated	62
Other nuisances abated	295

Particulars as to the inspection of premises periodically inspected during the year 1912 are herewith given :—

OFFENSIVE TRADES :—

Number on Register	53
Inspections	334
Notices served	7
Notices complied	6

DAIRIES, COWSHEDS AND MILKSHOPS :—

Milkshops on Register	371
Cowsheds on Register	11
Inspections of milkshops	2,339
" " cowsheds	189
Notices served	71
Notices complied	75

SHOPS, STORES, &c. :—

Inspections of butchers' shops	1,147
" " provision shops	217
" " markets	561
" " wholesale stores	2,842
" " fish and fruit shops	171
" " storage premises	1,252

MISCELLANEOUS INSPECTIONS :—

Public houses	...	...	...	...	...	276
Notices served	...	...	...	...	...	37
Notices complied	...	...	...	...	...	35
Theatres, etc.	...	...	...	...	...	65
Notices served	...	...	...	...	...	5
Notices complied	...	...	...	...	...	3
Fried-fish shops	...	...	...	...	...	509
Notices served	...	...	...	...	...	29
Notices complied	...	...	...	...	...	24
Ice-cream shops	...	...	...	...	...	537
Notices served	...	...	...	...	...	7
Notices complied	...	...	...	...	...	7
Inspections of urinals	...	...	...	...	...	268
Smoke observations	...	...	...	...	...	21
Visits to owners <i>re</i> notices	...	...	...	...	...	598

COMMON LODGING HOUSES :—

Common Lodging Houses on Register	...	...	...	...	32
Day inspections	...	...	...	...	2,239
Night inspections	...	...	...	...	40
Notices served	...	...	...	...	169
Notices complied	...	...	...	...	169

SEAMEN'S LODGING HOUSES :—

Seamen's Lodging Houses on Register	...	...	...	...	141
Licences granted	...	...	...	...	176
Licences relinquished	...	...	...	...	35
Day inspections	...	...	...	...	6,290
Night inspections	...	...	...	...	186
Notices served under Byelaws	...	...	...	...	343
Notices under Byelaws complied	...	...	...	...	349
Notices served under Public Health Acts	...	...	...	...	124
Notices under Public Health Acts complied	...	...	...	...	121
Persons cautioned for lodging seamen without being licensed	...	...	...	...	42
Legal proceedings for lodging seamen without being licensed	...	...	...	...	6

Two persons were ordered to pay costs, two were cautioned, one case was dismissed, and one was adjourned *sine die*.

SUMMARY OF LEGAL PROCEEDINGS.

Legal Proceedings.	Number of Cases.	Fines.	Costs.
		£ s. d.	£ s. d.
Under Sale of Food and Drugs Acts	46	94 6 0	8 1 6
„ Byelaws as to Seamen's Lodging Houses	6	—	0 11 0
„ Public Health Act, 1875	2	0 10 0	0 8 6
„ Shop Hours Act, 1904	10	0 5 0	0 13 6
Totals	64	£95 1 0	£9 14 6

VITAL STATISTICS.—The statistics in this report are based upon the Registrar-General's estimate of the population of Cardiff for the middle of the year 1912, *i.e.*, 184,633. The population of the City enumerated at the census of April, 1911, amounted to 182,259, being an increase of 17,926 over the census of 1901 (164,333). The increase in the population of the whole city was at the rate of 10·9 per cent., as compared with 27·4 per cent., the rate in the previous intercensal period.

The excess of births over deaths in Cardiff during the intercensal period, *i.e.*, from April, 1901, to March, 1911, amounted to 25,031. The number of births amounted to 50,853, and the deaths to 25,822, but the actual increase in the population according to the census returns, was only 17,926, or a difference of 7,105. This would imply that there has been a considerable migration of population from the city to the adjoining districts during the period in question. It will be seen on reference to Table XXV., that in the South and Adamsdown Wards, there has been an actual decrease in the population, and that in the Central Ward the population has remained practically stationary.

Table XXVI shows the decennial increase in the populations in suburban districts immediately adjoining Cardiff, in which a very substantial rate of increase is shown during the same period, varying from 28·5 per cent. in Lisvane to 86·6 per cent. in Whitchurch.

TABLE XXV.

Decennial increase or decrease of population in each Municipal Ward in Cardiff:—

MUNICIPAL WARDS.	Increase (+) or Decrease (—) of population.		Increase (+) or Decrease (—) per cent.	
	Between 1891–1901	Between 1901–1911	Between 1891–1901	Between 1901–1911
Central	— 1,062	+ 47	— 8·6	+ 0·4
South	— 399	— 201	— 3·7	— 1·9
Cathays	+ 3,999	+ 3,545	+ 27·5	+ 19·1
Adamsdown	— 2,046	— 201	— 12·6	— 1·4
Riverside	+ 2,224	+ 2,824	+ 14·9	+ 16·4
Canton	+ 6,561	+ 2,343	+ 49·8	+ 11·8
Grangetown	+ 8,850	+ 2,552	+ 75·4	+ 12·3
Roath	+ 2,405	+ 3,368	+ 19·7	+ 23·0
Park	+ 6,835	+ 2,158	+ 47·7	+ 10·2
Splott	+ 8,051	+ 1,491	+ 91·4	+ 8·8
Totals	+ 35,418	+ 17,926	+ 27·4	+ 10·9

TABLE XXVI.

Decennial increase or decrease of population in adjoining districts:—

PARISHES.	Increase (+) or Decrease (—) of population		(Increase (+) or Decrease (—) per cent.	
	Between 1891–1901	Between 1901–1911	Between 1891–1901	Between 1901–1911
Lisvane	+ 8	+ 73	+ 3·2	+ 28·5
Llandaff	+ 1,398	+ 3,365	+ 31·9	+ 58·2
Llanishen	+ 521	+ 521	+ 75·4	+ 42·9
Whitchurch	+ 1,543	+ 4,214	+ 46·4	+ 86·6
Totals	+ 3,470	+ 8,173	+ 38·8	+ 67·4

TABLE XXVII.

Area in acres of, and average number of persons per acre in, each Municipal Ward in Cardiff :—

MUNICIPAL WARDS.	AREA IN ACRES*	PERSONS PER ACRE†
Central	457	24.8
South	163	62.0
Cathays	382	57.7
Adamsdown	172	81.3
Riverside	298	66.9
Canton	448	49.2
Grangetown	1,143	20.2
Roath	750	23.9
Park	539	43.2
Splott	818	22.4
Cardiff	5,170	35.2

* Excluding inland water, docks and foreshore.

† Calculated on the basis of the population according to the Census, 1911.

The following table gives the population of Cardiff according to the census returns since 1801. The increase shown between 1871 and 1881 was in part due to the extension of the boundaries of the Borough, by the inclusion of the districts of Roath and Canton, in the year 1875.

TABLE XXVIII.

Year.	Census Population.
1801	1,870
1811	2,457
1821	3,521
1831	6,187
1841	10,077
1851	18,351
1861	32,954
1871	39,536
1881	82,761
1891	128,915
1901	164,333
1911	182,259

The following is a summary of vital statistics for the year 1912 :—

Estimated Population, 184,633.

Births	4,597	Birth-rate per 1,000	24.9
Deaths	2,563	Death-rate per 1,000	13.9
Deaths from Zymotic Diseases ...	362	Zymotic Death-rate per 1,000 ...	1.96
Deaths under One Year of Age ...	509	Deaths under One Year per 1,000 Births Registered.	110

TABLE XXIX.

Table showing the number of deaths and death-rates per 1,000 from Zymotic, Respiratory, and Tuberculous Diseases during the year 1912 :—

Cause of Death.	Number of Deaths.	Death-rate per 1,000.
Measles	202	1.09
Scarlet Fever	8	0.04
Diphtheria	31	0.17
Enteric Fever	15	0.08
Whooping Cough	55	0.29
Diarrhœa	51	0.27
Respiratory Diseases	433	2.34
Phthisis	244	1.32
Other Tuberculous Diseases	64	0.34

TABLE XXX.

Table showing the birth-rate, death-rate and zymotic death-rate per 1,000 persons living, and rate of infant mortality for 1912, compared with the rates for 1911 and the average rates for the ten years 1902-1911 :—

Period.	Birth-rate	Death-rate.	Zymotic Death-rate.	Deaths under 1 year per 1,000 births registered.
1912	24.9	13.9	1.96	110
1911	25.8	14.1	1.99	135
1902-1911	28.9	14.9	1.59	127

MARRIAGES.—The return of the number of marriages in the City of Cardiff during the years 1903-1912, with the rate of persons married per 1,000 of the population, is given below.

TABLE XXXI.

YEAR.	MARRIAGES.	RATE OF PERSONS MARRIED PER 1,000 LIVING.
1903	1,668	19.3
1904	1,563	17.7
1905	1,650	18.8
1906	1,769	19.2
1907	1,743	18.5
1908	1,759	18.3
1909	1,803	18.4
1910	1,728	17.3
1911	1,646	18.0
1912	1,938	20.9

BIRTHS.—During the year 1912 the births registered in the City numbered 4,597 ; of these, 2,313 were males and 2,284 were females. The number of births corresponded to an annual birth-rate of 24·9 per 1,000 persons living. During the ten years ended 1891, the birth-rate in Cardiff averaged 39·9 per 1,000, as compared with 28·9, the average rate during the years 1902–1911.

The following table gives the annual number of births and the birth-rates in Cardiff in periods since 1852, from which it will be seen that a considerable decline in this rate has taken place during recent years.

TABLE XXXII.

Period.	Number of Births.				Birth-rate per 1,000.	
1852–1861	1,144	...	...	...	44·2
1862–1871	1,364	...	...	...	37·7
1872–1881	2,433	...	...	...	36·5
1882–1891	4,166	...	...	...	39·9
1892–1901	5,241	...	...	...	35·3
1902	5,278	...	...	...	32·0
1903	5,250	...	...	...	31·2
1904	5,208	...	...	...	30·6
1905	5,140	...	...	...	29·8
1906	5,001	...	...	...	28·7
1907	4,865	...	...	...	27·7
1908	5,172	...	...	...	29·1
1909	5,026	...	...	...	28·0
1910	4,822	...	...	...	26·5
1911	4,730	...	...	...	25·8
1912	4,597	...	...	...	24·9

TABLE XXXIII.

Showing the number of legitimate and illegitimate births, male and female, in each municipal ward during the year 1912 :—

Municipal Wards.	Legitimate		Illegitimate.		Totals.		TOTALS.
	Males.	Females.	Males.	Females.	Males.	Females.	
Central	110	114	11	6	121	120	241
South	119	112	5	4	124	116	240
Cathays	254	298	7	7	261	305	566
Adamsdown	150	182	8	9	158	191	349
Riverside	169	152	19	20	188	172	360
Canton	334	293	7	17	341	310	651
Grangetown	338	345	11	6	349	351	700
Roath	214	226	8	5	222	231	453
Park	259	210	6	5	265	215	480
Splott	281	268	3	5	284	273	557
Totals	2,228	2,200	85	84	2,313	2,284	4,597

DEATHS.—The total number of deaths registered at all ages and from all causes in the City of Cardiff during the year 1912 amounted to 2,620, including non-residents who died within the district. This number corresponded to an annual death-rate of 14·2 per 1,000 persons living. If corrected by the subtraction of non-residents who died in public institutions in Cardiff, and by the addition of residents who died in institutions outside the city, the number is reduced to 2,563, and the death-rate to 13·9 per 1,000.

From Table XXXIV. it will be seen that a continuous decline in the death-rate has taken place since these rates were first recorded in 1852-1861, when the mean rate for the ten years reached 29·2 per 1,000. The rate for the year 1912 (13·9) was, with the exception of that in 1910 (13·0), the lowest on record.

The death-rate throughout the country as compared with that of Cardiff for the year 1912 is given below :—

						Death-rate per 1,000 persons living.
England and Wales	...	...	...	...	...	13·3
95 Great Towns	...	...	...	...	...	13·8
146 Smaller Towns...	...	...	...	...	...	12·4
England and Wales, less 241 towns	...	...	...	...	...	12·9
CARDIFF	...	...	...	...	...	13·9

TABLE XXXIV.

The following Table gives the vital statistics in periods since 1852, and shows the marked decline in the general death-rate, in the death-rate from zymotic diseases, and in the birth-rate in successive periods.

Years	Population	Births	Birth-rate per 1,000	Deaths	Death-rate per 1,000	Deaths from Zymotic Diseases	Zymotic Death-rate per 1,000
1852—1861	25,889	1,144	44·2	756	29·2	222	8·58
1862—1871	36,152	1,364	37·7	875	24·2	167	4·62
1872—1881	66,639	2,433	36·5	1,335	20·0	218	3·27
1882—1891	104,420	4,166	39·9	2,255	21·6	347	3·32
1892—1901	148,606	5,241	35·3	2,674	18·0	355	2·39
1902	166,473	5,278	32·0	2,865	17·2	459	2·75
1903	168,206	5,250	31·2	2,496	14·8	323	1·37
1904	169,957	5,208	30·6	2,695	15·8	320	1·88
1905	171,726	5,140	29·8	2,443	14·2	216	1·25
1906	173,512	5,001	28·7	2,618	15·0	248	1·42
1907	175,318	4,865	27·7	2,819	16·0	358	2·03
1908	177,143	5,172	29·1	2,538	14·3	219	1·23
1909	178,987	5,026	28·0	2,549	14·2	170	0·94
1910	180,849	4,822	26·5	2,356	13·0	187	1·03
1911	182,729	4,730	25·8	2,594	14·1	364	1·99
1912	184,633	4,597	24·9	2,563	13·9	362	1·96

TABLE XXXV.

* Showing the number of deaths and death-rates at various age periods during the last six years :—

AGES.	Number of Deaths.						Death-rate per 1,000 persons living at each age group.					
	1907	1908	1909	1910	1911	1912	1907	1908	1909	1910	1911	1912
Under 5 years	1,026	838	720	741	837	851	43·4	34·7	29·2	29·5	36·3	36·9
5 to 15 "	98	111	92	102	104	100	2·3	2·6	2·1	2·3	2·6	2·5
15 " 25 "	147	127	135	128	105	127	3·9	3·3	3·4	3·2	2·9	3·5
25 " 65 "	1,008	962	1,014	883	947	946	12·5	11·7	12·1	10·3	12·1	12·0
65 years and upwards	540	500	588	502	601	539	97·5	88·5	102·1	85·4	111·4	99·9
At all ages	2,819	2,538	2,549	2,356	2,594	2,563	16·0	14·3	14·2	13·0	14·1	13·9

TABLE XXXVI.

Death-rates from all causes per 1,000 persons living in the several municipal wards, the highest rate in each year being underlined :—

	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Cardiff (Whole District) ...	14.8	15.8	14.2	15.0	16.0	14.3	14.2	13.0	14.1	13.9
Roath Ward ...	12.4	13.3	11.4	12.3	11.9	10.7	11.3	11.9	13.0	12.8
Park Ward ...	8.7	9.3	8.8	8.9	9.9	8.9	8.9	9.3	12.4	11.9
Splott „ ...	11.2	15.0	12.5	13.9	13.7	13.2	10.7	12.9	12.9	14.0
Central „ ...	15.0	14.2	14.0	14.4	15.2	12.8	13.0	<u>20.4</u>	<u>22.1</u>	<u>21.0</u>
South „ ...	15.3	15.2	13.0	16.4	17.1	15.4	14.3	18.3	21.4	19.1
Cathays „ ...	9.8	11.1	10.1	11.2	11.1	10.0	9.3	10.5	12.3	12.6
Adamsdown Ward ...	16.1	15.5	<u>17.6</u>	<u>17.2</u>	20.3	15.7	17.2	14.9	16.3	16.3
Riverside „ ...	14.3	11.3	9.4	9.2	10.1	10.7	10.8	13.6	12.6	10.6
Canton „ ...	10.7	12.0	9.8	9.9	10.4	10.3	10.0	10.7	12.7	12.9
Grangetown „ ...	13.6	15.2	14.3	14.4	17.0	14.0	14.0	14.0	14.2	15.6

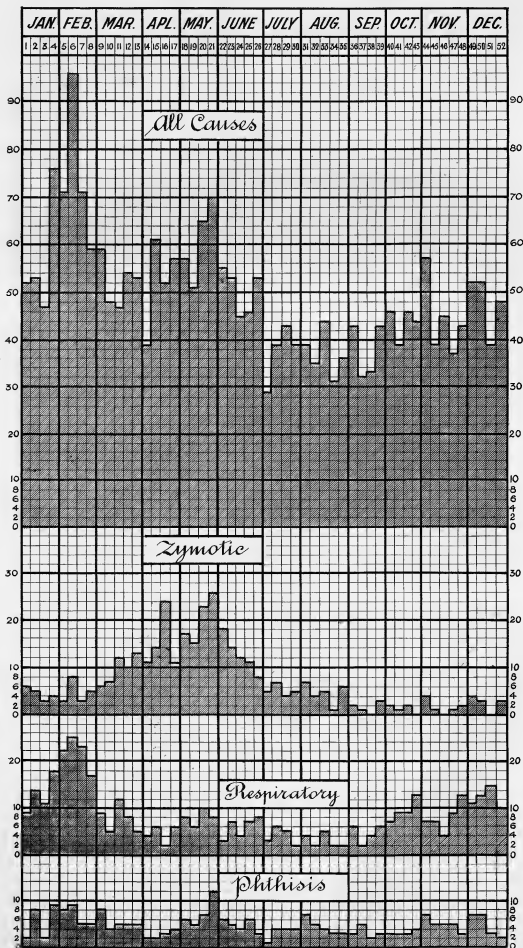
TABLE XXXVII.

The following table gives the crude death-rate per 1,000 in several large towns in England and Wales during the years 1906—10, 1911, and 1912.

Towns.	Death-rate per 1,000.		
	1906—1910	1911	1912
London ...	14.9	15.0	13.6
West Ham ...	15.5	15.8	14.1
Croydon ...	12.1	11.8	10.6
Brighton ...	14.8	13.8	12.7
Portsmouth ...	14.1	14.1	12.9
Plymouth ...	16.3	17.2	14.9
Bristol ...	13.9	15.1	13.3
Swansea ...	16.5	16.2	13.3
Wolverhampton ...	15.8	15.8	13.4
Birmingham ...	16.6	16.8	14.1
Norwich ...	15.0	14.1	12.7
Leicester ...	13.8	13.3	13.4
Nottingham ...	16.2	16.1	14.4
Derby ...	13.9	14.3	12.1
Birkenhead ...	15.4	15.6	14.3
Liverpool ...	19.6	20.0	18.1
Bolton ...	15.9	15.9	13.4
Manchester ...	18.1	17.0	16.0
Salford ...	18.2	16.7	16.5
Oldham ...	18.6	17.6	16.1
Burnley ...	17.7	18.0	14.7
Blackburn ...	16.3	16.1	14.2
Preston ...	17.9	16.9	16.6
Halifax ...	15.2	15.2	14.7
Bradford ...	15.3	14.9	14.4
Leeds ...	16.0	16.4	14.2
Sheffield ...	16.3	16.1	14.2
Gateshead ...	16.1	16.1	15.4
Newcastle-on-Tyne ...	16.5	16.1	14.2
Huddersfield ...	15.3	15.0	13.6
Hull ...	16.1	16.7	14.4
Sunderland ...	18.6	17.9	15.9
CARDIFF ...	14.4	14.1	13.9

Chart A.

SHOWING THE NUMBER OF DEATHS FROM ALL CAUSES, ZYMOTIC DISEASES, RESPIRATORY DISEASES, AND PHTHISIS IN CARDIFF DURING EACH WEEK OF THE YEAR 1912.



Having regard to the great variation in the death-rate at the several age periods, and to the variations in sex and age distribution in different towns, it is of importance to ascertain the effect of this variation upon the general death-rate of these towns. The Registrar-General has therefore adopted a method for correcting the crude death-rate for age and sex distribution. A factor for correction is obtained by dividing the standard death-rate in England and Wales by the standard death-rate in each town, and is the figure by which the crude death-rate should be multiplied in order to correct for variations of sex and age distribution.

The term *standard death-rate* signifies the rate at all ages, calculated on the hypothesis that the rates for each sex at each of the twelve age periods in each town, were the same as in England and Wales. In practice the mean death-rates for England and Wales (during the last inter-censal period) at certain age groups for males and females respectively are applied to the census populations at the corresponding age groups in the several towns; the sum of the results for each town gives the number of deaths that would have occurred had the mortality in each sex and age group been the same as that in England and Wales as a whole, and the death-rate, based on this aggregate number of deaths, is called the *standard rate*.

The difference between the standard death-rate for any town and the mean rate for the whole country is due to differences of sex and age constitution of population, and the quotient obtained by dividing the death-rate in England and Wales by this standard death-rate gives the factor by which the crude death-rate is multiplied in order to obtain the corrected death-rate for the town in question.

The "factor" obtained in this way based upon the population of Cardiff at the census of 1911 is 1.0606. To obtain a death-rate corrected for age and sex distribution it is necessary, therefore, to multiply the crude or general death-rate of 13.9 by 1.0606, which gives 14.7, the corrected death-rate for Cardiff for the year 1912.

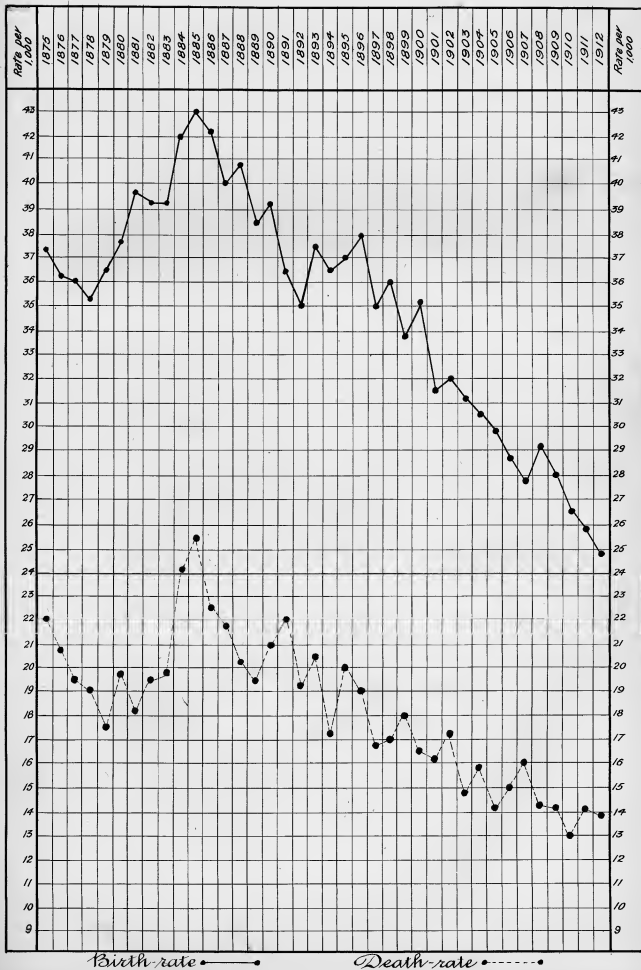
TABLE XXXVIII.—Analysis of Births and Deaths in the City of Cardiff, in Registration Sub-Districts, and in Municipal Wards, during the year 1912.

LOCALITIES	*Population	Area in Acres (Land and Inland Water)	Persons per Acre	Births		Deaths		Deaths under 1 Year	Seven Principal Zymotic Diseases		Principal Zymotic Diseases.										Pulmonary Tuberculosis		Other Tuberculous Diseases.		Respiratory Diseases																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
				Number		Death-rate			Number per 1,000 Births	Number	Death-rate	Small-pox		Measles		Scarlet Fever		Whooping Cough		Diphtheria		Typhoid Fever		Diarrhoea		Death-rate	Deaths	Death-rate	Deaths																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

* The population of the whole city is that estimated by the Registrar-General, and the populations of the Registration Sub-districts and of the Municipal Wards are those enumerated at the census, 1911.

Chart B.

BIRTH-RATE AND DEATH-RATE PER 1,000 IN CARDIFF, 1875-1912.



INFANT MORTALITY.—The rate of infant mortality in Cardiff in the year 1912, calculated in the proportion of deaths under one year of age to 1,000 births registered, was at the rate of 110, compared with 135 in the year 1911, and with 127, the average rate for the ten years 1902–1911.

Rates of infant mortality throughout the country, as compared with that of Cardiff during 1912 :—

	Deaths under 1 year per 1,000 births.				
England and Wales	95
95 Great Towns	101
146 Smaller Towns	98
England and Wales, less 241 towns	86
CARDIFF	110

TABLE XXXIX.

Rates of infant mortality in Cardiff compared with the rates in the large towns and in England and Wales during past years :—

Period.	Deaths under 1 Year per 1,000 Births.		
	Cardiff.	Large Towns.	England and Wales.
1881—1890	165	162	141
1891—1900	161	172	153
1901	148	168	151
1902	145	145	133
1903	122	144	132
1904	144	160	146
1905	118	160	146
1906	134	145	133
1907	131	127	118
1908	124	128	121
1909	103	118	109
1910	111	115	106
1911	135	140	130
1912	110	101	95

From the foregoing table it will be seen that, comparing the rates of infant mortality in the two periods 1881–90 and 1891–1900, an actual increase is shown in the latter decennium, both in England and Wales as a whole and in the large towns. In Cardiff a slight decrease in the mortality is shown in the later period. Since the year 1900 there has been generally a steady, but not a very considerable, decline in this mortality throughout the country.

TABLE XL.

The following table shows the rates of infant mortality in the several municipal wards, the highest rate in each year being underlined :—

	Deaths under one year per 1,000 births.									
	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Cardiff (Whole District) ...	122	144	118	134	131	124	103	111	135	110
Roath Ward ...	133	123	104	114	121	115	105	127	135	88
Park „ ...	93	120	70	98	95	97	77	72	117	60
Splott „ ...	129	163	144	146	135	130	84	109	152	93
Central „ ...	114	164	129	<u>211</u>	<u>180</u>	135	96	<u>179</u>	160	<u>199</u>
South „ ...	<u>190</u>	<u>173</u>	135	<u>159</u>	<u>176</u>	<u>140</u>	154	<u>148</u>	<u>213</u>	<u>129</u>
Cathays „ ...	<u>104</u>	<u>110</u>	95	99	107	<u>99</u>	78	105	<u>120</u>	107
Adamsdown Ward ...	146	142	<u>149</u>	153	134	114	<u>160</u>	125	117	126
Riverside „ ...	109	135	<u>112</u>	110	109	128	<u>89</u>	112	132	80
Canton „ ...	101	134	105	118	102	127	101	94	120	115
Grangetown „ ...	122	170	134	151	159	133	110	114	132	142

TABLE XLI.

The chief causes of death amongst infants under one year of age in Cardiff during the years 1905–1912 are shewn in the following table :—

Cause of Death.	Deaths under one year of age.								
	1905	1906	1907	1908	1909	1910	1911	1912	
Premature Birth	74	87	95	113	89	96	97	91	
Diarrhoea and Enteritis	76	147	80	141	77	77	201	44	
Pneumonia	56	44	83	46	42	46	39	59	
Bronchitis	43	59	54	30	33	46	26	53	
Whooping Cough	18	41	30	25	30	11	32	22	
Tuberculosis (all forms)	38	42	22	29	22	24	25	15	
Atrophy and Debility	75	83	86	80	61	63	57	60	
Convulsions	64	47	47	52	55	44	41	31	
Measles	19	...	35	2	7	16	1	42	
Congenital Defects	20	18	11	18	26	22	20	15	

Chart C

DEATHS UNDER ONE YEAR PER 1,000 BIRTHS IN CARDIFF,
1885 - 1912.

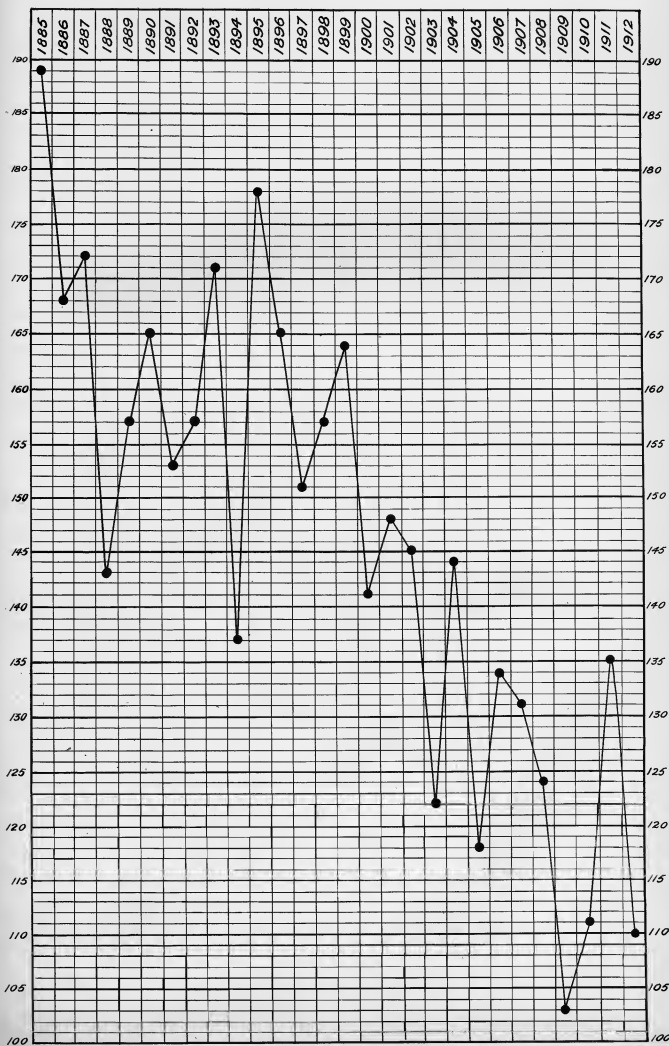


TABLE XLII.

Infant mortality rates in thirty-three large towns :—

Towns.	Deaths under one year per 1,000 births registered.		
	1906-1910	1911	1912
London	114	129	90
West Ham	127	141	104
Croydon	97	106	76
Brighton	107	98	76
Portsmouth	110	126	82
Plymouth	127	145	107
Bristol	109	141	103
Swansea	144	136	100
Wolverhampton	129	135	88
Birmingham	145	164	112
Norwich	127	135	104
Leicester	137	132	110
Nottingham	152	162	117
Derby	111	123	79
Birkenhead	131	134	97
Liverpool	148	154	125
Bolton	136	163	98
Manchester	146	154	121
Salford	134	149	128
Oldham	139	160	117
Burnley	179	210	145
Blackburn	144	188	118
Preston	161	172	123
Halifax	81	123	81
Bradford	132	138	99
Leeds	134	158	101
Sheffield	138	140	106
Gateshead	142	136	103
Newcastle-on-Tyne	130	136	101
Huddersfield	107	132	96
Hull	136	155	101
Sunderland	136	151	115
CARDIFF	122	135	110

TABLE XLIII.

The following table indicates the difference between the mortality of legitimate and illegitimate infants in Cardiff during the years 1905-1912 :—

Year.	Births.		Percentage of illegitimate to total births.	Deaths under 1 year.		Deaths under one year per 1,000 births registered.		
	Total	Illegitimate		Total	Illegitimate	Total	Legitimate	Illegitimate
1905	5,140	164	3.2	607	50	118	112	305
1906	5,001	172	3.4	675	59	134	127	343
1907	4,865	146	3.0	639	51	131	124	349
1908	5,172	193	3.7	644	63	124	116	326
1909	5,026	206	4.0	518	52	103	96	252
1910	4,822	191	3.9	537	57	111	103	298
1911	4,730	192	4.0	639	68	135	125	354
1912	4,597	169	3.6	509	45	110	104	266

Table IV. in the Appendix gives the number of deaths from stated causes in weeks and months under one year of age during 1912. Summarising these tables for the years 1906-1912, it will be found that the infant mortality at age periods per 1,000 births was as follows :—

TABLE XLIV.

Year.	Deaths per 1,000 births.				
	Under 1 week	Under 1 month	Under 3 months	3—6 months	6—12 months
1906	19.3	38.5	70.1	32.1	32.5
1907	23.6	39.0	65.3	22.6	43.4
1908	26.1	42.1	66.1	24.9	31.1
1909	22.2	37.0	56.5	18.9	27.6
1910	23.6	41.4	63.8	23.2	24.2
1911	23.6	41.0	64.4	30.4	40.1
1912	22.8	41.5	62.8	15.2	32.6

The fluctuation in the annual mortality amongst infants depends largely upon the variations in the temperature and rainfall during the summer months. The contrast between the years 1911 and 1912 in these respects is well marked. The summer of 1911 was exceedingly hot and dry, whilst that of 1912 was comparatively cool and wet. As a result of these conditions the infant mortality in 1911 exceeded that of 1912. The annual rate of infant mortality is influenced to a very considerable extent by the amount of diarrhoeal disease in the summer, and this again is found to depend upon the temperature and rainfall in the summer.

During the year 1912, one out of every forty-four infants born died within seven days of birth, the deaths being due for the most part to premature birth and congenital defects. Forty-four deaths amongst infants under one year of age were attributed to diarrhoea and enteritis, as compared with 201 in the year 1911. Most of these deaths occurred between the ages of three and twelve months.

The following table shows the number of days with high maximum temperatures, and the number of deaths from diarrhoea, in Cardiff, during the months of July, August and September, 1906-1912.

TABLE XLV.

Period.			Number of days with maximum temperature between										Deaths from Diarrhea
			°F.	°F.	°F.	°F.	°F.	F°.	°F.	°F.	°F.		
			50—55	55—60	60—65	65—70	70—75	75—80	80—85	85—90	90—95		
July,	1906	...	...	...	8	15	5	3	...	...	...	8
"	1907	...	...	3	12	7	2	6	1	...	...	3
"	1908	...	...	...	9	11	7	2	2	...	...	9
"	1909	...	...	3	17	10	1	...	...	...	...	2
"	1910	...	...	2	18	8	3	...	...	...	...	8
"	1911	...	...	...	3	3	8	9	6	1	1	20
"	1912	...	...	1	12	10	4	2	2	...	...	8
August,	1906	...	...	...	4	14	9	1	3	...	...	32
"	1907	...	...	...	13	17	1	...	...	...	...	6
"	1908	...	...	3	10	11	6	1	...	...	...	44
"	1909	...	...	...	8	12	2	9	...	...	...	21
"	1910	...	...	1	15	12	3	...	...	...	...	16
"	1911	...	...	...	...	11	7	7	2	3	1	143
"	1912	...	...	8	20	3	...	...	...	...	...	10
September,	1906	...	...	...	12	14	1	1	2	...	...	70
"	1907	...	...	4	6	11	9	...	...	...	...	15
"	1908	...	1	12	12	4	1	...	...	...	...	33
"	1909	...	1	12	14	3	...	...	...	...	...	19
"	1910	...	...	6	16	8	...	...	...	...	...	17
"	1911	...	...	8	9	2	5	3	2	1	...	44
"	1912	...	3	14	10	3	...	...	...	...	...	2

In the foregoing table the figures relating to temperature are for calendar months, and those relating to deaths are for periods of four or five weeks as the case may be.

TABLE XLVI.

Rates of infant mortality during the third quarters of the years 1906-1912 in the Municipal Wards of Cardiff :—

Municipal Wards.	Deaths under 1 year per 1,000 births.						
	Third quarter of						
	1906	1907	1908	1909	1910	1911	1912
Central	216	118	191	118	259	269	148
South	191	131	114	227	200	325	48
Cathays	82	104	96	84	115	253	72
Adamsdown	152	156	124	176	130	164	69
Riverside	111	83	165	118	77	257	42
Canton	138	80	138	100	109	222	78
Grangetown	190	138	200	124	105	225	117
Roath	160	102	154	70	132	256	59
Park	98	81	107	55	34	254	31
Splott	198	111	239	108	78	328	48
Cardiff (Whole District) ...	154	114	158	110	107	252	71

NOTIFICATION OF BIRTHS ACT, 1907.—This Act, which was adopted in 1908, provides for the notification to the Medical Officer of Health of every birth within the City by the father, if residing in the house where the birth takes place, and by any person in attendance upon the mother at the time of, or within six hours after, the birth. The notification must be given to the Medical Officer of Health within thirty-six hours after birth.

The following table gives the number of births notified under this Act in each quarter of the year 1912, together with the number of still-births notified.

TABLE XLVII

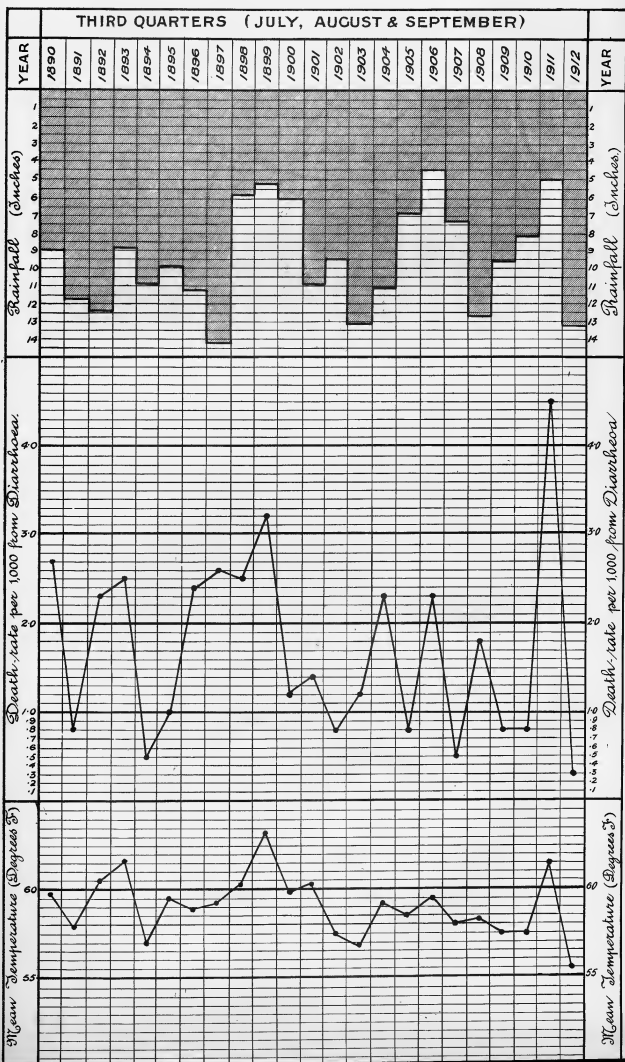
1912.	Births notified by Midwives	Births notified by Doctors or Parents.	Duplicate Notifications Received.	Actual Number of Births notified.	Still-births notified.
1st Quarter ...	1,176	56	9	1,232	50
2nd „ ...	1,058	56	8	1,114	55
3rd „ ...	1,069	50	8	1,119	54
4th „ ...	1,062	43	8	1,105	50
Totals ...	4,365	205	33	4,570	209

Births notified during the year 1912	...	...	...	4,570
Births registered during the year 1912	...	...	...	4,597
Number of still-born infants buried in the Cardiff Cemetery during the year 1912 ...	...	...	...	239

It will be seen that 99.6 per cent. of the births registered were notified.

Chart D

SHOWING THE INFLUENCE OF THE RAINFALL AND MEAN TEMPERATURE ON THE DEATH-RATE PER 1,000 FROM DIARRHOEA IN CARDIFF DURING THE SUMMER QUARTERS OF THE YEARS 1890-1912.



"Infant Consultations," or schools for mothers, are of recent development, all, however, having the same objects, namely, the reduction of infant mortality and the improvement of the physical condition of rising generations. They owe their origin to the "Consultation de Nourrissons" and "Gouttes de lait" originally established in France, usually in connection with milk depots, and intended to succour those infants of the poor for whom breast-feeding is practically impossible. The milk is modified, pasteurised or sterilised, and served in "one-feed" bottles. In this country these institutions are sometimes entirely supported by voluntary agencies, or partly by these agencies assisted by municipal contributions, and sometimes they are, as in Cardiff, entirely under the control of the Health Authority. At present no public supply of milk is distributed from the Cardiff "Consultation," the efforts being directed to the instruction of the mothers in the feeding and rearing of their infants, breast-feeding being insisted upon wherever possible. In the years 1908 and 1909 several centres were established in this town to which mothers were invited to bring their infants, where they were medically inspected, weighed and kept under observation, and instructed. Since the year 1910, however, it has been found more convenient to concentrate this work at one central station. A weekly "Consultation for Infants" has therefore been established in the Department of the Medical Officer of Health at the City Hall, and rooms have been set apart and fitted for this purpose.

The experience of the past few years has abundantly proved the vast amount of ignorance of infant life existing amongst mothers of all classes, but attention has, of course, been chiefly directed to those who from their circumstances seemed least able to carry out successfully their maternal duties; a promising feature of the "Consultation" being the willingness on the part of many mothers to acknowledge their ignorance and to profit by the instruction given. No actual medical treatment of sick children is undertaken. When this is found to be necessary the mother is referred to her own doctor, or to a Hospital or dispensary, the object in view being the instruction of the mothers and how best she may manage herself and her infant during the first year of its life. The treatment is therefore preventive, and consists in the application of the well recognised principles and laws of domestic hygiene, and this in most cases is all that is necessary. With suitable food and clothing and with scrupulous home cleanliness and plenty of fresh air, most of the infants who attend the "Consultation" thrive admirably without any of the soothing remedies so frequently applied by ignorant parents and over officious female friends.

The Cardiff "Consultation" is under the immediate supervision of Dr. Elizabeth F. Elder in the Department of the Medical Officer of Health, who is assisted by Health Visitors and Nurses. The "Consultation" is open every Tuesday afternoon, when the mothers bring their infants and receive advice and instruction in the feeding and rearing of their offspring. The infant is weighed at each visit, the weight being recorded upon a chart, the mother then being able to readily observe the progress and development which is noted each week. Records are kept of the inspections, weighings, and general progress of the infants, and, when necessary, of the family history and social conditions of the parents.

Closely associated with, and in fact forming part of the "Consultation," is the systematic home visitation by the Health Visitors, who have on their visiting lists the names and addresses of those mothers who most require and desire the personal instruction from them. This part of the work is co-ordinated with the administration of the Midwives Act, 1902. Mrs. Huntley, the Senior Health Visitor, acts as Visitor and Superintendent of Midwives. She was assisted during the earlier part of the year by Miss F. Wade, who resigned in May, and was succeeded by Miss B. H. King. Probationary nurses and pupil health visitors also assist in the visitation of homes and at the "Consultation." The districts selected for visits are those in which the poorer classes reside, and each house is visited in which a birth has taken place. The first visit is made soon after the birth, generally about the tenth day after the attendance of the doctor or midwife has ceased.

During the year 1912 "Infant Consultations" were held as follows on Tuesday afternoons.

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13	9	12	12
	Total	... 46.	

The attendances made at the "Consultations" were :—

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
778	838	920	892
Total		... 3,428.	

The individual babies under observation at the "Consultations" during each quarter were :—

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
337	412	457	424

The number of individual babies under observation during the year was 1,034. The average attendance of babies per consultation was 74.5.

The number of deaths of infants under one year of age amongst those attending was 29, and of those between one and two years of age, 8. Altogether 37 deaths occurred amongst 1,034 infants attending the consultations.

During the year, 7,554 home visits were paid by health visitors, and 3,935 infants were visited shortly after birth.

Owing to the comparatively cool and wet summer, few deaths from diarrhoea and enteritis were registered amongst infants under one year of age, the total being 44; twenty-three of these cases were visited by the Health Visitors.

The following table shows the nature of the food in twenty-three fatal cases of diarrhoea amongst infants under one year of age :—

TABLE XLVIII.

Nature of Food.				Under 3 months.	3—6 months.	6—12 months.	Totals.
Breast Fed only	...	...	...	2	1	1	4
Cow's Milk	...	...	...	1	5	3	9
Cow's Milk and other food	...	...	...	...	2	1	3
Condensed Milk	...	...	...	5	...	...	5
Patent foods	...	...	...	2	...	...	2
TOTALS	...	...	...	10	8	5	23

Condition of homes :—

Clean	...	...	...	16
Dirty	...	...	...	7
Total	...	...	...	<u>23</u>

Nature of food of 3,935 infants under one year of age visited by the Health Visitors :—

Breast Fed	...	...	...	...	...	...	3,321
Breast Fed and other Food	...	...	...	...	...	...	260
Cow's Milk	...	...	...	...	...	...	109
Cow's Milk and other Food	...	...	...	...	...	...	87
Condensed Milk	...	...	...	...	...	...	82
Condensed Milk and other Food	...	...	...	...	...	...	35
Patent Foods	...	...	...	...	...	...	41
Total							<u>3,935</u>

MIDWIVES ACT, 1902.—This Act has now been in operation since the 1st April, 1903, and is administered locally by the Health and Port Sanitary Committee, with the Medical Officer of Health as Executive Officer.

The Act provides for the education of midwives, and for the certification and enrolment of women qualified to act in that capacity. No person can now habitually act as a midwife, otherwise than under the direction of a qualified medical practitioner, unless she is certified under this Act. The Certificate of the Central Midwives Board can only be obtained after the training specified in the Rules of the Board, and after passing the Board's Examination. A certain number of midwives were, however, placed on the Roll of Midwives and certified in virtue of their having been in practice before the passing of the Act.

The rules regulating the course of training for the certificate of the Board specify that no person shall be admitted to an examination unless she has undergone a course of theoretical and practical instruction in the subjects embraced by the examination, given by a teacher recognised by the Board, and unless she has attended and watched the progress of not fewer than twenty labours, and has nursed twenty lying-in women and their infants during the ten days following labour. This practical training must be carried out under the supervision of a medical practitioner approved by the Board for the purpose, or of a certified midwife or matron of an approved institution, or of any certified midwife approved by the Board. The Committee of the Queen's Nursing Institute have established a Maternity Department, and take pupils for the practical training of midwives. This training may also be obtained by the resident nurses at the Cardiff Union Infirmary. Five certified midwives in practice in Cardiff have been recognised by the Central Midwives Board for the purpose of giving practical instruction to pupil midwives.

A course of lectures has been established in connection with the Medical School of the University College of South Wales and Monmouthshire in Cardiff, intended to meet the requirements of candidates presenting themselves for the examination of the Central Midwives Board. Dr. E. J. Maclean is the teacher recognised by the Board for this purpose. He informs me that during the year 1912 seventy-eight pupil midwives attended his course of lectures, of whom twenty were resident in Cardiff. The Cardiff City Council, through the Technical Instruction Committee, and the Glamorgan County Council, through the Education Committee, contribute towards the expenses of this course, and have the privilege of nominating pupils for free studentships in midwifery. Twelve such studentships are awarded annually to women residing in Cardiff.

Copies of the Rules of the Central Midwives Board are supplied to all practising midwives in the district, who are also supplied with printed instructions relating to the prevention of Ophthalmia Neonatorum. This disease is unfortunately somewhat common, and it has been ascertained that over one-third of the inmates of schools for the blind have lost their sight as a result of this disease. There is, however, no difficulty in saving the sight in these cases if they are brought under efficient treatment in the earliest stages of the disease. Under the Rules of the Central Midwives Board, midwives are compelled to notify all such cases to the Local Supervising Authority.

The following instructions were drawn up at the request of, and issued in the form of a leaflet by, the Central Midwives Board :—

INFLAMMATION OF THE EYES IN NEWBORN CHILDREN.

OPHTHALMIA NEONATORUM.

This is a very common cause of *hopeless blindness*, which is one of the greatest misfortunes that can happen to a child. A very large number of children will be saved from blindness if the following directions of the Central Midwives Board are observed.

The disease generally arises from purulent discharges from the mother getting into the baby's eyes at birth.

It is therefore of the greatest importance that this should be prevented :—

1. By curing such discharges if possible before Labour. This requires medical treatment (Rule E. 19 (2) & (3)).
2. By taking the greatest care that such discharges shall not be carried into the baby's eyes when it opens them for the first time soon after its head is born.

The discharges may be carried into the baby's eyes in the following ways :—

- (a) The discharges collect round its eyes, especially the eyelashes, and easily get into its eyes.

This can be generally prevented if the midwife observes Rule E. 14 : " As soon as the child's head is born, and if possible before the eyes are opened, its eyelids must be carefully cleansed." They should be thoroughly wiped with clean material such as cotton-wool, lint, or rag, using separate pieces for each eye. The reason for this is that the piece used for wiping the first eye will be polluted by the discharges, and should not be used for the other eye.

- (b) Newborn babies sometimes rub their eyes with their hands. This may rub the discharges into their eyes. When Rule E. 14 has been complied with the baby's hands must be carefully cleansed.
- (c) When the baby is bathed the discharges with which its body is covered during Labour are washed off into the bath-water. If its face is washed in this water, matter may get into the eyes.

N.B.—The above directions are to be observed in ALL cases, whether purulent discharges are known to be present or not.

The Central Midwives Board is determined, so far as lies in its power, to secure the strict observance of its Rules and Directions, and to punish any failure to comply with them, even in cases where no harm can be proved to have followed from their neglect.

F. H. CHAMPNEYS, M.D., F.R.C.P.,

Chairman of the Central Midwives Board.

December, 1909.

The supervision of the practice of midwives has been efficiently carried out by Mrs. L. Huntley, the Inspector appointed by the Local Supervising Authority, who holds the licence of the Obstetrical Society and is a certified midwife.

The following tables give information relating to the administration of the Midwives Act during the year 1912.

Number of Midwives on Roll for 1912	124
-------------------------------------	-----	-----	-----	-----

QUALIFICATIONS OF CERTIFIED MIDWIVES.

<i>Bona Fide</i>	...	...	...	67
Certificate of London Obstetrical Society	...	...	...	8
Certificate of Central Midwives Board	...	...	...	49
Total	...	...	...	124

Particulars as to appliances, etc. possessed by Midwives :—

Washable dresses	...	...	...	...	124
Bags for appliances	...	...	...	...	119
Appliances—complete	...	...	...	...	109
Appliances—part	...	...	...	...	15
Case books	...	...	...	...	114
Record books	...	...	...	...	114

Records of sending for medical help received from Midwives :—

In case of the mother	...	...	...	...	146
In case of the child	...	...	...	...	23
Total	...	...	...	...	169

RECORDS OF SENDING FOR MEDICAL HELP BY MIDWIVES.

IN CASE OF THE MOTHER :—

Abortion	...	...	...	...	...	2
Delay in Labour	...	...	...	...	...	50
Presentation Wrong	...	...	...	...	...	20
Ante-Partum Hæmorrhage	...	...	...	...	...	5
Post-Partum Hæmorrhage	...	...	...	...	...	7
Retained Placenta	...	...	...	...	...	17
Ruptured Perineum	...	...	...	...	...	20
Pyrexia	...	...	...	...	...	3
Small Pelvis	...	...	...	...	...	5
Growth on Cervix	...	...	...	...	...	4
Placenta Prævia	...	...	...	...	...	2
Illness of Mother	...	...	...	...	...	10
Death of Mother	...	...	...	...	...	1
						146

IN CASE OF THE CHILD :—

Feebleness of Infant	...	...	...	...	...	16
Deformity	...	...	...	...	...	1
Stillbirths	...	...	...	...	...	3
Large Infant	...	...	...	...	...	1
Discharging Eyes	...	...	...	...	...	2
						23

Still-births notified by Midwives	...	...	...	...	209
Still-births attended by Midwives without Medical Practitioner...	...	...	...	...	17
Midwives suspended from practice	...	...	...	...	5
Cases of Puerperal Fever attended by Midwives	...	...	...	...	10
Deaths of Midwives	...	...	...	...	2

MILK SUPPLY.—A special report dealing with the control of milk supplied to the inhabitants of this town and with the establishment of a milk depot was submitted to the Sanitary Authority in September, 1911, extracts from which were contained in the annual report for that year. The powers possessed by the authority in this respect are conferred by several Acts of Parliament, supplemented by Orders and Regulations of the Local Government Board and Board of Agriculture, as follows :—

- (1) The Public Health Act, 1875, and the Public Health Amendment Act, 1907.
- (2) The Infectious Diseases (Prevention) Act, 1890.
- (3) The Cardiff Corporation Act, 1909.
- (4) The Dairies, Cowsheds and Milkshops Orders and Regulations.
- (5) The Sale of Food and Drugs Acts.
- (6) The Public Health (Milk and Cream) Regulations, 1912.
- (7) The Tuberculosis Order, 1913.

Quite recently (1st August, 1912), the Local Government Board issued The Public Health (Milk and Cream) Regulations, 1912. These Regulations have for their object the prohibition of preservatives in milk under any circumstances whatever and the restriction on the use of preservatives in cream. Article III. (1) provides that no person shall add, or order or permit any other person to add, any preservative substance to milk intended for human consumption, and Article III. (2) that no person shall sell, or expose or offer for sale, or have in his possession for the purpose of sale, any milk to which any preservative substance has been added. Article IV. prohibits the addition of any preservative substances to cream containing less than 35 per cent. of milk-fat, and restricts the use of any preservatives but boric acid and hydrogen peroxide to cream containing more than 35 per cent. of milk-fat. Thickening substances are prohibited altogether.

Dealers selling preserved cream to which these preservatives have been added are required to call the attention of the purchaser to the fact by labelling the vessels in which the cream is deposited for sale and delivered to the purchaser. The labels must indicate the exact amount of boric acid contained in the cream, which amount must not be exceeded.

The Board of Agriculture and Fisheries have issued a new Tuberculosis Order, which came into operation on the 1st May, 1913. The following circular letter, dated 17th February, 1913, from the Board fully explains the objects of the Order :—

SIR,

1. I am directed by the Board of Agriculture and Fisheries to send to you for submission to your Local Authority, the enclosed copies of the Tuberculosis Order of 1913, which will come into operation on the 1st of May, 1913.

2. This Order follows generally the Order of 1909, which, as your Local Authority are aware, was withdrawn before it came into operation, but in connection with the cost of administering the Order, I am to inform you that the Board have obtained from the Lords Commissioners of His Majesty's Treasury authority to refund to Local Authorities from monies provided by Parliament one half of the net amount payable by way of compensation for slaughtered animals during a period of five years from the coming into operation of the Order. Local Authorities will thus receive substantial pecuniary relief during the initial stages of the operations now to be undertaken, during which the expenditure involved in the administration of the Order may be expected to be abnormally high.

3. As was pointed out in the Circular Letter to Local Authorities issued with the Order of 1909, the subject of tuberculosis in man and in animals, and the relations between the disease in human beings and in animals has been the subject of careful investigation both in this country and abroad during recent years, and various phases of the question have been inquired into by successive Royal Commissions. As regards the possibility of the transmission of the disease from affected bovine animals to man, the Board are satisfied that it must be accepted as a fact that tuberculosis is transmissible by the agency of milk used for human consumption.

4. In considering the question of tuberculosis in relation to animals, the fact that the disease is thus communicable to man has a material bearing on the measures to be adopted. Any action which results in the reduction in the number of tuberculous bovine animals in the country must reduce the risk of the spread of tuberculosis amongst the community, and if it were possible to eradicate from this country the disease in animals, a material step forward would have been taken in the campaign against the disease in man.

5. It is abundantly clear, at the same time, that any operations aiming at the diminution or eradication of tuberculosis in animals must be commenced with caution, and carried out with due regard to the extent to which the disease is believed to exist amongst cows, and to the importance of securing the continuance of an adequate milk supply, and also of avoiding any disorganisation of the important industry concerned.

6. The Order, the leading provisions of which are set out below, aims at securing the destruction of every cow found to be suffering from tuberculosis of the udder, or to be giving tuberculous milk, as well as of all bovine animals which are suffering from tuberculosis with emaciation, since these are known to disseminate freely the germs of the disease. In thus confining the provisions of the Order to those forms of tuberculosis only, the Board have not lost sight of the fact that it may be possible in the future to take further action in the light of the experience gained. They feel, however, that heroic measures taken at the present time would only defeat their own object.

7. Local Authorities for the purposes of the Diseases of Animals Acts are charged with the duty of investigating reports received under the Order, with the assistance of a Veterinary Inspector, with a view to causing the slaughter of any animal in their District shown to be suffering from one of these specified forms of tuberculosis. Under Article 4 of the Order the Veterinary Inspector will be able to extend his examination to any bovine animals upon the premises that have been associated with a suspected animal, in order that he may at the same time take steps to deal with any other bovine animal which in his opinion presents clinical symptoms of tuberculosis; and for the purpose of assisting him in his diagnosis he may, but only with the written consent of the owner of the animal, apply the tuberculin test to any animal which the Inspector suspects of suffering from one of the specified forms of tuberculosis. Power is also given to the Veterinary Inspector to take samples of milk and of faeces, urine, and abnormal discharges, the intention being that he shall make use of bacteriological methods for the purpose of diagnosis.

8. The Local Authority are required by Article 5 of the Order to cause every animal found by them to be suffering from one of the specified forms of tuberculosis to be slaughtered. The animal to be slaughtered is to be valued in its condition at the time of valuation. Inasmuch, however, as the clinical diagnosis made by the Veterinary Inspector prior to slaughter may not be confirmed on post-mortem examination, it is provided in paragraph (3) of Article 6 of the Order that there shall be separate valuations on the basis both of the animal proving to be affected with tuberculosis and of its proving to be not so affected, and the amount of the compensation will depend on the result of the examination.

9. The compensation payable by the Local Authority for an animal slaughtered under their direction in cases in which post-mortem examination does not show tuberculosis is a sum equal to the full value of the animal and a further sum of twenty shillings.

10. Where tuberculosis is found the proportion of the value of the animal payable by way of compensation to the owner is made to depend upon the extent of the disease which is present. The Royal Commission of 1898 made certain recommendations with regard to the meat of tuberculous animals (see pages 20-22 of their Report), and the Local Government Boards for England and for Scotland adopted those recommendations and issued Circular Letters in the year 1899 for the guidance of Meat Inspectors as to the degree of tubercular disease which, in their opinion, should cause a carcass of an animal, or part thereof, to be seized under the Public Health Acts. The Board have adopted this classification as a basis on which the proportion of compensation payable under their Order is to be determined.

11. The degrees of tuberculosis described in Article 8 (4) of the Order are those which in the opinion of the Commissioners justify the seizure by Meat Inspectors of the entire carcass and all the organs thereof. Wherever such conditions are certified to exist the compensation is fixed at a sum equal to one-fourth of the value of the animal valued as a tuberculous animal or the sum of thirty shillings, whichever sum is greater, after deducting from such sum one-half of the costs incurred by the Local Authority for any valuation of the animal by a valuer appointed by the Board or for any examination of its carcass by a veterinary surgeon other than the Veterinary Inspector. For convenience these conditions are described in the Order as "advanced tuberculosis." In all other cases of tuberculosis i.e., in cases where a carcass, if otherwise healthy, need not in the opinion of the Commissioners be condemned under the Public Health Acts except as regards the portions containing tuberculous lesions, the compensation is to be a sum equal to three-fourths of the value of the animal, after deducting from such sum one-half of the costs of valuation and examination as in the preceding case.

12. The Order prescribes the precautions to be taken in respect of the milk, &c., of suspected animals (Article 9), and their detention and isolation whilst under suspicion (Article 10). Provision is also made in Article 11 of the Order for dealing with suspicious animals exposed at Markets, Fairs, or Sales.

13. The Board believe that public opinion is favourable to the adoption of concerted measures designed to check the spread of tuberculosis throughout the country, and no such action can be satisfactory which fails to make provision for dealing with the disease in the animal, but it should, the Board feel, carry with it a full measure of public sympathy and support. The payment to agriculturists of reasonable compensation for animals slaughtered in the public interest must, in the opinion of the Board, be an essential feature of any well-devised scheme for gradually reducing the prevalence of tuberculosis in animals. On the other hand, the liability of the Treasury and of the Local Authority to provide such compensation on the present basis from public funds is a serious one, and cannot be continued unless events show that a return commensurate with the burden imposed is being obtained. It behoves agriculturists, therefore, to second the efforts of the public authorities by the segregation of all bovine animals which respond to the tuberculin test, so as to prevent tuberculosis from being spread within the herd, and the Board will be prepared to advise how this can best be done in particular cases.

14. The Board desire at the same time to point out to Public Health Authorities that any extension in particular localities of the measures now to be taken throughout the country generally, may prejudice their general utility. The danger to the public health from the milk of a cow presenting no clinical symptoms of tuberculosis and not giving tuberculous milk, even should it re-act to the tuberculin test, is admittedly small, and stockowners cannot be expected to pursue the course suggested above unless they are satisfied that re-action to the tuberculin test will not expose their herd to administrative action on the part of Public Health Authorities. It is earnestly to be hoped, therefore, that Public Health Authorities and their Officers will as far as practicable conform their procedure to the lines laid down in the Board's Order.

15. Although it is inevitable that at the outset of the operations the expenditure should be comparatively heavy, inasmuch as the first effects of the Order will be to bring within its purview the cows of all ages suffering from tuberculosis of the udder or giving tuberculous milk, and bovine animals of all kinds which show signs of tuberculosis with emaciation, it is anticipated that when the Order has been in operation for a few years those animals only will fall to be dealt with which from an outwardly healthy condition develop these forms of the disease. The cost to the Local Authority of the administration of the Order after the initial period has elapsed should not be great, and may properly be defrayed in full by Local Authorities in the manner provided for in the Diseases of Animals Acts.

16. The Board have thought it desirable to deal in this letter with the broader aspects of the question only. Points of administrative detail, including the procedure to be followed in connection with the re-imbusement to Local Authorities of sums paid by them in compensation, will be dealt with in a further letter to be sent out nearer the time when the Order actually takes effect. That letter will also deal with the publication of the Order, which need not, in the interval, be proceeded with.

17. In the meantime the Board will be glad if your Local Authority will give immediate consideration to the steps to be taken to put their Officers in a position to carry the Order into effect, more especially with regard to the provision of a sufficient and competent veterinary staff.

I am, Sir,

Your obedient Servant,

SYDNEY OLIVIER,

Secretary.

BACTERIOLOGICAL EXAMINATION OF MILK.—The Cardiff Corporation Act, 1909, gives power to the Medical Officer of Health to take samples of milk for examination from dairies either within or without the City. Samples so taken are submitted to the Cardiff and County Public Health Laboratory for examination. During the year the systematic examination of milks for tubercle bacilli, commenced in the last quarter of 1911, has been continued. Thirty-nine samples of milk taken in Cardiff were examined, 3 of which gave a positive and 36 a negative result; the proportion of milks infected with tubercle being 7·7 per cent. of the number examined. All of the infected milks were supplied to Cardiff from districts outside the City. The provisions of the Cardiff Corporation Act with respect to taking samples of milk outside the City were put into operation, and the necessary steps were taken to prevent the sale of this milk within the district. The number of samples taken, is, of course, too small to enable any conclusion to be formed as to the amount of tuberculous milk supplied to the City. In the Public Health Laboratory samples of milk are also submitted by the Health Department of the Glamorgan County Council. During the last quarter of 1911, and the whole of 1912, 98 samples of milk were examined from Glamorgan and Cardiff; of these six were found to contain tubercle bacilli.

A Milk and Dairies Bill has been introduced into Parliament, which, if it become law, will give still further powers with respect to the sale of milk. The main objects of the Bill are to provide for :—

- (1) The more effective registration of dairies and dairymen ;
- (2) The inspection of dairies and the examination of cows therein ;
- (3) The prohibition of the supply of milk from a dairy where such a supply has caused, or would be likely to cause, infectious diseases, including tuberculosis ;
- (4) The prevention of the sale of tuberculous milk ;
- (5) The regulation of the importation of milk, so as to prevent danger to public health arising therefrom ;
- (6) The issue of regulations for securing the supply of pure and wholesome milk ;
- (7) The establishment by Local Authorities in populous places of milk depots for the sale of milk specially prepared for infants.

INFECTIOUS DISEASES.—The 2,563 deaths from all causes included 362 from the principal infectious diseases. This number was equal to an inclusive death-rate from these diseases of 1·96 per 1,000 persons living, as compared with 1·99 the rate in 1911, and with 1·59, the average rate in the ten years 1902-1911.

The recently issued report of the Local Government Board on the number of cases of notifiable infectious diseases in England and Wales enables a comparison to be made of the incidence of these diseases in the several sanitary areas of England and Wales. The following table is compiled from the statistics contained in this report, and gives the number of cases of the principal infectious diseases in relation to the population of the areas concerned. This relation is given as the proportion of cases notified per 1,000 of the population, and is called the sickness rate.

TABLE XLIX.

	Sickness Rate per 1,000.					
	Enteric Fever.		Scarlet Fever.		Diphtheria.	
	1911	1912	1911	1912	1911	1912
England and Wales ...	0·38	0·23	2·90	2·98	1·32	1·24
England ...	0·38	0·23	2·84	2·95	1·33	1·24
Wales (including Monmouth)	0·38	0·21	3·66	3·35	1·30	1·27
Aggregate of County Boroughs :—						
England ...	0·43	0·28	3·32	3·46	1·47	1·68
Wales (including Monmouth)	0·26	0·25	3·85	3·46	1·68	1·84
Cardiff ...	0·20	0·31	4·10	2·59	2·60	2·94

The mortality from these diseases in Cardiff was distributed in each quarter of the year 1912 as follows :—

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Small-Pox ...	—	—	—	—
Measles ...	21	168	13	—
Scarlet Fever ...	4	1	2	1
Diphtheria ...	7	6	10	8
Enteric Fever ...	7	3	3	2
Whooping Cough ...	36	15	2	2
Diarrhœa ...	10	11	20	10

In the Registration Sub-districts, the mortality during 1912 from these diseases was as follows :—

	No. of deaths	Death-rate per 1,000.
East Cardiff ...	114	1·91
Central „ ...	121	2·10
West „ ...	127	1·95

TABLE L.

Death-rates from Infectious Diseases per 1,000 persons living in Cardiff :—

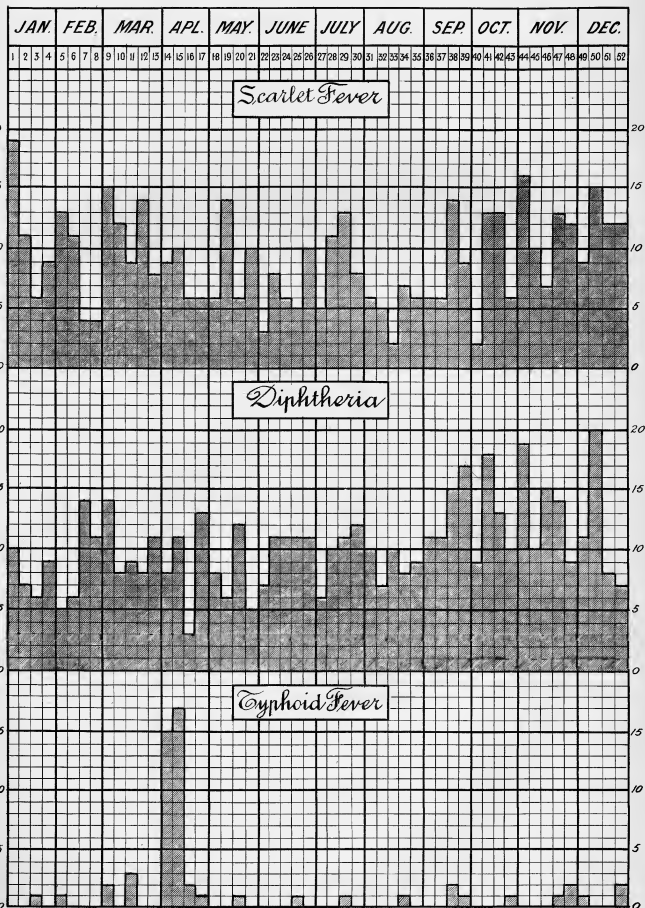
	1875—80	1881—90	1891—1900	1901—1910	1911	1912
Small-pox ...	0.01	0.03	0.01	0.00	0.00	0.00
Measles ...	0.46	0.66	0.42	0.34	0.03	1.09
Scarlet Fever ...	1.00	0.41	0.17	0.10	0.08	0.04
Diphtheria ...	0.11	0.20	0.47	0.20	0.20	0.17
Whooping Cough ...	0.55	0.52	0.48	0.31	0.29	0.29
Enteric Fever ...	0.37	0.33	0.14	0.05	0.03	0.08
Diarrhoea ...	0.78	0.93	0.91	0.50	1.32	0.27

TABLE LI.

The following table shows the number of cases of infectious disease notified in the City of Cardiff in each year since the adoption of the Infectious Disease (Notification) Act, 1889 :—

Year.	Small-Pox.	Diphtheria (including Membranous Group).	Scarlet Fever.	Enteric Fever.	Typhus Fever.	Erysipelas.	Puerperal Fever.	Continued Fever.	Totals.
1890 ...	...	72 ...	335 ...	150 ...	— ...	45 ...	4 ...	2 ...	608
1891 ...	9 ...	70 ...	658 ...	130 ...	— ...	52 ...	10 ...	— ...	956
1892 ...	5 ...	164 ...	1,851 ...	118 ...	— ...	95 ...	12 ...	3 ...	2,248
1893 ...	4 ...	479 ...	816 ...	103 ...	41 ...	152 ...	24 ...	2 ...	1,621
1894 ...	10 ...	343 ...	577 ...	62 ...	1 ...	135 ...	19 ...	3 ...	1,150
1895 ...	1 ...	248 ...	484 ...	79 ...	— ...	132 ...	17 ...	5 ...	966
1896 ...	45 ...	306 ...	874 ...	74 ...	1 ...	134 ...	21 ...	7 ...	1,462
1897 ...	7 ...	516 ...	758 ...	117 ...	— ...	163 ...	12 ...	7 ...	1,580
1898 ...	— ...	960 ...	332 ...	80 ...	— ...	133 ...	18 ...	6 ...	1,529
1899 ...	— ...	640 ...	184 ...	94 ...	— ...	176 ...	13 ...	8 ...	1,115
1900 ...	4 ...	714 ...	383 ...	95 ...	4 ...	106 ...	15 ...	5 ...	1,326
1901 ...	8 ...	734 ...	1,362 ...	73 ...	— ...	152 ...	16 ...	3 ...	2,348
1902 ...	2 ...	701 ...	1,433 ...	69 ...	— ...	169 ...	13 ...	7 ...	2,394
1903 ...	65 ...	438 ...	963 ...	100 ...	6 ...	145 ...	20 ...	5 ...	1,742
1904 ...	11 ...	406 ...	658 ...	40 ...	— ...	112 ...	12 ...	2 ...	1,241
1905 ...	24 ...	327 ...	362 ...	39 ...	— ...	133 ...	14 ...	3 ...	902
1906 ...	2 ...	333 ...	776 ...	77 ...	— ...	117 ...	17 ...	1 ...	1,323
1907 ...	16 ...	304 ...	950 ...	62 ...	— ...	147 ...	16 ...	— ...	1,495
1908 ...	— ...	291 ...	475 ...	55 ...	— ...	167 ...	15 ...	1 ...	1,004
1909 ...	2 ...	283 ...	616 ...	46 ...	— ...	132 ...	6 ...	2 ...	1,087
1910 ...	1 ...	363 ...	887 ...	36 ...	— ...	137 ...	8 ...	— ...	1,432
1911 ...	— ...	491 ...	753 ...	44 ...	— ...	127 ...	8 ...	— ...	1,423
1912 ...	— ...	536 ...	472 ...	56 ...	— ...	170 ...	11 ...	— ...	1,245

SHOWING THE NUMBER OF NOTIFICATIONS OF SCARLET FEVER, DIPHtherIA
AND TYPHOID FEVER DURING EACH WEEK OF THE YEAR 1912.



SMALL-POX.—No cases of small-pox were notified in Cardiff during the year

Death-rate from small-pox in Cardiff since the year 1875 :—

YEARS.						DEATH-RATE PER 1,000
1875-1880	...	...	...	...	...	0-01
1881-1890	...	...	...	...	...	0-03
1891-1900	...	...	...	...	...	0-01
1901	...	...	...	...	...	0-00
1902	...	...	...	...	...	0-00
1903	...	...	...	...	...	0-01
1904	...	...	...	...	...	0-00
1905	...	...	...	...	...	0-00
1906	...	...	...	...	...	0-00
1907	...	...	...	...	...	0-01
1908	...	...	...	...	...	0-00
1909	...	...	...	...	...	0-00
1910	...	...	...	...	...	0-00
1911	...	...	...	...	...	0-00
1912	...	...	...	...	...	0-00

I am indebted to the Vaccination Officer for the following return of vaccinations within the City during the years 1905-1912 :—

TABLE LII.

Year.	Successfully Vaccinated.	Insuscept- ible.	Postponed.	Certificates of Exemption and Statutory Declarations.	Died Unvaccina- ted.	Unaccounted for and left the town.
1905	4,422	14	79	65	527	561
1906	3,475	20	101	76	525	810
1907	2,804	13	87	89	418	1,843
1908	3,183	20	87	429	466	894
1909	3,066	18	35	545	369	1,012
1910	2,784	11	69	683	380	597
1911	2,107	25	83	745	416	466
1912	2,718	14	28	1,041	369	230

TABLE LIII.

The following table shows the condition as to vaccination amongst the notified cases of small-pox during the years 1906-1912.

Year.	No. of Cases.	No. of Deaths.	Vaccinated in Infancy.	Vaccinated later in life.	Re- vaccinated.	Un- vaccinated.
1906	10	2*	3	2	1	5
1907	15	1†	13	...	2	2
1908	...	...	...	...	...	...
1909	3	1*	1	1	...	1
1910	1	1†	1	...	...	...
1911	...	...	...	...	...	...
1912	...	...	...	...	...	...
Totals	29	5	18	3	3	8

* Unvaccinated.

† Vaccinated in infancy.

The figures in Table LII. clearly show the effect of the most recent Vaccination Act, in increasing the number of conscientious objectors to vaccination. The Act had for its object the substitution of a statutory declaration for the certificate of conscientious objection required under Section 2 of the Vaccination Act of 1898. The new Act came into force on January 1st, 1908, with the result that the exemptions from vaccination have increased from 65 in 1905, to 1,041 in 1912. Obviously the proportion of the population unprotected from small-pox is increasing annually. Those who desire information upon this subject should study the effect of legislation in the opposite direction. Under the German law children must be vaccinated before they are twelve months old, and re-vaccinated in their twelfth year of age. The strict enforcement of this law has resulted in the almost complete extinction of small-pox in Germany, the few cases that do occur being amongst aliens in seaport towns, and these are safely dealt with in general hospitals, as the other inmates of these institutions are protected by vaccination. In that country, therefore, it has been unnecessary to construct and maintain expensive and separate small-pox hospitals.

SCARLET FEVER.—Eight deaths were attributed to scarlet fever during the year 1912, being equal to an annual death-rate of 0·04 per 1,000 persons living, as compared with 0·08, the rate in 1911, and with 0·09, the average rate in the ten years 1902–1911.

The mortality from scarlet fever throughout the country was as follows during the year 1912:—

						Death-rate per 1,000.
England and Wales	...	...	...	...	...	0·05
95 Great Towns	...	...	...	...	...	0·06
146 Smaller Towns	...	...	...	...	...	0·05
CARDIFF	...	...	...	...	...	0·04

The number of cases of scarlet fever notified amounted to 472, distributed as follows in the Registration Sub-districts and in each quarter of the year 1912:—

Registration Sub-District.	First Quarter.		Second Quarter.		Third Quarter.		Fourth Quarter.		Total.
East Cardiff	...	46	...	35	...	43	...	55	179
Central „	...	60	...	37	...	23	...	38	158
West „	...	29	...	27	...	32	...	47	135
Totals	...	135	...	99	...	98	...	140	472

Age periods of persons notified to be suffering from scarlet fever and the percentage proportion of deaths to cases notified in each age period during the year 1912:—

Ages.	No. of cases Notified.		Deaths.		Mortality per cent.	
0—1 year	...	4	...	1	...	25·0
1—5 years	...	129	...	2	...	1·5
5—15 „	...	297	...	4	...	1·3
15—25 „	...	33	...	—	...	0·0
25—65 „	...	9	...	1	...	11·1

Of the 472 cases of scarlet fever notified, 385, or 81·5 per cent., were removed to the Cardiff Isolation Hospital.

The following table shows the number of cases of scarlet fever notified in each year since 1891, and shows also the attack-rate, the death-rate, the proportion of deaths to cases notified, &c. :—

TABLE LIV.
SCARLET FEVER.

Year.	Population.	No. of Cases Notified.	Attack rate per 1,000.	No. of Deaths.	Death rate per 1,000.	Percentage Removed to Hospital.	Mortality per cent. of Cases Notified.
1891	130,283	685	5·2	35	0·27	—	5·0
1892	132,895	1,851	13·1	87	0·65	13	4·7
1893	136,168	816	6·0	39	0·28	22	4·7
1894	139,519	577	4·1	8	0·05	31	1·3
1895	142,958	484	3·3	8	0·05	43	1·6
1896	146,479	874	5·9	28	0·19	48	3·2
1897	150,087	758	5·0	17	0·11	50	2·2
1898	153,783	332	2·1	8	0·05	56	2·4
1899	157,414	184	1·1	3	0·01	66	1·6
1900	161,452	383	2·3	11	0·06	65	2·8
1901	164,759	1,362	8·2	29	0·17	47	2·1
1902	166,473	1,433	8·6	36	0·21	48	2·1
1903	168,206	963	5·7	32	0·19	63	3·7
1904	169,957	658	3·8	25	0·14	72	3·3
1905	171,726	362	2·1	4	0·02	75	1·1
1906	173,512	776	4·4	3	0·01	74	0·4
1907	175,318	950	5·4	21	0·11	72	2·2
1908	177,143	475	2·6	10	0·05	78	2·1
1909	178,987	616	3·4	7	0·03	79	1·1
1910	180,849	887	4·8	19	0·10	78	2·1
1911	182,729	753	4·1	16	0·08	77	2·1
1912	184,633	472	2·5	8	0·04	81	1·6

Scarlet fever was not very prevalent during the year 1912, the number of cases notified being the smallest during the past seven years.

Most of the cases occurred amongst children at school ages, 430 out of the 472 notified at all ages being under fifteen years of age. The disease was of a mild type, the mortality being at the rate of 1·6 per cent. of cases notified. The incidence of the disease upon the scholars attending public elementary schools is given in the Annual Report to the Education Authority. It was found upon inquiry that the spread of scarlet fever was in many cases due to the attendance in school of mild and unrecognized cases. Teachers have been cautioned to exclude from school and to notify to the Medical Officer of Health any children showing symptoms suggestive of this disease. The milk supply of every case of scarlet fever occurring during the year has been ascertained, and there has been no indication that the infection has been carried by this article of diet.

DIPHTHERIA AND MEMBRANOUS CROUP.—Thirty-one deaths were registered from these diseases during the year, corresponding to an annual death-rate of 0·17 per 1,000 persons living, as compared with 0·20, the rate in 1911, and with 0·17, the rate in the ten years 1902–1911.

The mortality from diphtheria throughout the country in 1912 was as follows :—

	Death-rate per 1,000.
England and Wales	0·11
95 Great Towns	0·13
146 Smaller Towns	0·11
Cardiff	0·17

The number of cases of diphtheria and membranous croup notified during the year amounted to 536, as compared with 491 in 1911. The fatality, or proportion of deaths to cases notified, during the year was 5·7 per cent. Of the cases notified, 408 or 76·1 per cent. were removed to the Cardiff Isolation Hospital.

Number and distribution of cases of diphtheria during each quarter of the year 1912 :—

Registration Sub-districts.	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Totals.
East Cardiff	55	55	76	59	245
Central „	30	48	37	47	162
West „	34	14	24	57	129
	119	117	137	163	536

The number of notifications and the rate of fatality at various age periods during 1911 are shown below :—

Ages.	Cases Notified.	Deaths.	Mortality per cent. of cases notified.
0—1 year	5	—	0·0
1—5 years	114	12	10·5
5—15 „	332	18	5·4
15—25 „	56	1	1·7
25 years and upwards ...	29	—	0·0

The following table shows the number of cases of diphtheria and membranous croup notified in each year since 1891, and shows also the attack-rate, the death-rate, the proportion of deaths to cases notified, &c.

TABLE LV.

DIPHTHERIA AND MEMBRANOUS CROUP.

Year.	Population.	No. of Cases Notified.	Attack rate per 1,000.	No. of Deaths.	Death rate per 1,000.	Percentage Removed to Hospital.	Mortality per cent. of Cases Notified.
1891 ...	130,283	70	0·5	16	0·12	—	22·8
1892 ...	132,895	164	1·2	36	0·27	—	21·9
1893 ...	136,168	479	3·5	93	0·68	—	19·4
1894 ...	139,519	343	2·4	59	0·42	—	17·2
1895 ...	142,958	248	1·7	46	0·32	3	18·5
1896 ...	146,479	306	2·0	55	0·37	3	17·9
1897 ...	150,087	516	3·4	90	0·59	15	17·4
1898 ...	153,783	960	6·2	129	0·83	21	13·4
1899 ...	157,414	640	4·0	61	0·38	46	9·5
1900 ...	161,452	714	4·4	81	0·50	53	11·3
1901 ...	164,759	734	4·4	78	0·47	47	10·6
1902 ...	166,473	701	4·2	88	0·52	46	12·5
1903 ...	168,206	438	2·5	36	0·21	51	8·2
1904 ...	169,957	406	2·3	31	0·18	47	7·6
1905 ...	171,726	327	1·9	23	0·13	56	7·0
1906 ...	173,512	333	1·9	13	0·07	56	3·9
1907 ...	175,318	304	1·7	23	0·13	59	7·6
1908 ...	177,143	291	1·6	22	0·12	62	7·5
1909 ...	178,987	283	1·5	14	0·07	62	4·9
1910 ...	180,849	363	2·0	24	0·13	68	6·6
1911 ...	182,729	491	2·6	37	0·20	67	7·5
1912 ...	184,633	536	2·9	31	0·17	76	5·7

On referring to the tables relating to diphtheria it will be found that the attack or sickness rate per 1,000 of the population is relatively high in Cardiff, and that the case fatality or mortality per cent. of cases notified is exceedingly low. The sickness rate in 1912 compares unfavourably with that of County Boroughs as a whole, the rate being 2.94 per 1,000 in Cardiff, as compared with 1.68, the aggregate of County Boroughs in England, and with 1.84 in those of Wales. In County Boroughs the highest sickness rates occurred in Croydon (4.6), Portsmouth (4.5), Canterbury (3.8), Barrow-in-Furness (3.1), and Cardiff (2.9). The lowest rates occurred in Wigan and Blackburn (0.4), Oldham and Bath (0.3), Walsall, Bury, West Bromwich, and Oxford (0.2), and Dudley (0.1). In Cardiff the mortality of cases notified in 1912 was at the rate of 5.7 per cent., with two exceptions the lowest on record. This mortality varied from 22.8 per cent. in 1891 to 3.9 per cent. in 1906. Throughout the country the fatality of this disease has of late years diminished considerably. In London the proportion of deaths to cases notified averaged 22 per cent. in the five years 1891-5, and in the three succeeding quinquennia it fell to 16 per cent., 10 per cent., and 9 per cent. respectively. It would therefore seem that in Cardiff diphtheria assumes an unusually mild form. To some extent the fatality may be apparently reduced by the greater accuracy of diagnosis of late years, due to bacteriological methods, many cases of sore throats being diagnosed as diphtheria which would otherwise have escaped notice. Undoubtedly also modern methods of treatment have had the effect of reducing the fatality of this disease. From the tables published by the Metropolitan Asylums' Board, it would appear that the mortality per cent. of cases of diphtheria treated in their hospitals has been reduced from 30 per cent. in 1890-3, before the anti-toxin treatment was adopted, to 12 per cent. in 1900-3 when anti-toxin was freely used.

During the year swabs were sent to the Cardiff and County Public Health Laboratory from the throats of 284 cases suspected to be diphtheria, the bacteriological examination giving positive results in 86 cases and negative results in 198.

ENTERIC FEVER.—The number of deaths registered from enteric fever during the year amounted to fifteen, equivalent to an annual death-rate of 0.08 per 1,000 persons living. The average death-rate in the ten years 1902—1911 was 0.05.

The mortality from this disease in the year 1912 throughout the country was as follows :—

	Death-rate per 1,000.					
England and Wales	0.04
95 Great Towns	0.04
146 Smaller Towns	0.05
CARDIFF	0.08

The number of cases of enteric fever notified during 1912 was 56 ; of these 44, or 78.5 per cent., were removed to the Isolation Hospital.

The number of cases of enteric fever notified since the year 1891 is shown in the following table, which also shows the attack-rate, the death-rate, the proportion of deaths to cases notified, etc.

TABLE LVI.

ENTERIC FEVER.

Year.	Population.	No. of Cases Notified.	Attack rate per 1,000.	No. of Deaths.	Death rate per 1,000.	Percentage removed to Hospital.	Mortality per cent. of cases notified.
1891 ...	130,283	130	0.9	26	0.19	—	20.0
1892 ...	132,895	118	0.8	24	0.18	3	20.3
1893 ...	136,168	103	0.7	18	0.13	12	17.4
1894 ...	139,519	62	0.4	7	0.05	1	11.2
1895 ...	142,958	79	0.5	14	0.09	13	17.7
1896 ...	146,479	74	0.5	13	0.08	28	17.0
1897 ...	150,087	117	0.7	20	0.13	34	17.0
1898 ...	153,783	80	0.5	17	0.11	23	21.2
1899 ...	157,414	94	0.5	19	0.12	52	20.2
1900 ...	161,452	95	0.5	25	0.15	47	26.3
1901 ...	164,759	73	0.4	11	0.06	57	15.0
1902 ...	166,473	69	0.4	9	0.05	68	13.0
1903 ...	168,206	100	0.5	14	0.08	76	14.0
1904 ...	169,957	40	0.2	9	0.05	57	22.5
1905 ...	171,726	39	0.2	8	0.04	58	20.5
1906 ...	173,512	77	0.4	13	0.07	69	16.9
1907 ...	175,318	62	0.3	13	0.07	56	21.0
1908 ...	177,143	55	0.3	7	0.03	76	12.7
1909 ...	178,987	46	0.2	7	0.03	78	15.2
1910 ...	180,849	36	0.1	7	0.03	66	19.4
1911 ...	182,729	44	0.2	7	0.03	70	15.9
1912 ...	184,633	56	0.3	15	0.08	78	26.8

The following table shows the death-rates per 1,000 from enteric fever in periods since the year 1875 in Cardiff:—

1875—80	1881—90	1891—1900	1901—1910	1911	1912
0.37	0.33	0.14	0.05	0.03	0.08

The age periods of the persons notified to be suffering from enteric fever during the year, and the percentage mortality are given in the following table:—

TABLE LVII.

Ages.	Cases Notified.		Deaths.		Mortality per cent. of cases notified (both sexes).
	Male.	Female.	Male.	Female.	
1—5	1	2	...	...	...
5—15	1	37	...	4	10.5
15—25	1	5	1	1	33.3
25—45	6	...	4	1	83.3
45—65	2	1	2	1	100.0
Totals ...	11	45	7	7	25.0

In addition to the number of deaths in the above table, one death of a resident occurred outside the city.

Of the 56 cases notified, 37 occurred in one house under the following circumstances :—

During the year an outbreak of enteric fever occurred amongst the inmates of Nazareth House, an Institution certified as a Poor Law School, containing usually between 250 and 300 resident pupils (girls), about 20 resident Sisters, and the same number of lay adult females, with a few old men, who work in the garden. The outbreak appeared to be entirely confined to the inmates of this house, and was not apparently connected in any way with any outside cases in the town. For many years past Cardiff has been remarkably free from enteric fever, and this year formed no exception to the rule. The general behaviour and the intermittent character of the outbreak suggested a "typhoid carrier" as the probable cause, although up to the present it has been impossible to identify the carrier.

It may be well to explain that the term "typhoid carrier" has been recently applied to that limited proportion of convalescents from typhoid fever, in whom the typhoid bacillus maintains a prolonged existence, occasionally for years after the original attack of the disease. It has been found in some cases of what are called "chronic carriers," that the bacillus gets lodged in the gall bladder, and is discharged intermittently, sometimes after prolonged intervals, with the bowel excreta and with the urine, and this way such a carrier may be from time to time an unrecognised source of infection to others. In some of these cases the blood gives a positive reaction with the well known Widal's test, although not to the same extent as during acute attacks of the disease. The significance of these laboratory indications from a public health point of view is of course obvious. Unfortunately it is difficult to detect "carriers" amongst the numerous persons who may have been associated or in contact with cases of enteric fever, and still more difficult to control them when detected. It must be understood that this method of infection is comparatively rare, and that the number of cases of the disease due to "carriers" is relatively small, probably to some extent on account of the intermittent discharge of the bacilli and to the difficulty of transmitting the infection. The danger of infection is considerably increased when "carriers" have the opportunity of infecting food, particularly milk, which forms an admirable medium for the growth of the bacillus, and generally it would appear that the risk of infection from this source is almost entirely confined to those "carriers" whose occupations involve the handling of food. Most of the "carriers" hitherto detected have been engaged in a kitchen or dairy.

As already mentioned, the intermittent character of the attacks was a prominent feature in the outbreak at this school. On the 3rd April, 1912, I was asked by the medical practitioner in attendance to see some children in this school, some of whom he suspected to be suffering from enteric fever. Twenty-six of them were ill in bed in a large dormitory; several presented well marked clinical symptoms of this disease. On the 11th and 12th April, twenty-three of these cases were removed to the City Isolation Hospital for treatment and observation; three of the children were not removed and their illness terminated fatally a few days after that date. Subsequently five cases were discovered in which the onset of the disease occurred between the 6th and 17th April. Six more cases occurred—one in May, one in September, two in November, and two in December—making altogether thirty-seven cases of enteric fever amongst the female resident pupils of this institution, thirty-four of whom were removed to the City Isolation Hospital.

The age groups of the cases and deaths were as follows :—

Age Periods.	Cases.	Deaths.
5—10	12	2
10—15	22	2
15—20	3	...
Total ...	37	4

The approximate date of the onset of the disease in each case, with the result of Widal's test (dilution 1—15) are given below.

Age.	Date.	Widal's Test.	Age.	Date.	Widal's Test.
Yrs.	1912.		Yrs.	1912.	
M.O'C. 8	5th Mar.	Positive	J.L. 9	27th Mar.	Positive
A.C. 12	8th "	"	L.C. 14	29th "	"
M.M. 14	10th "	"	E.B. 12	29th "	"
W.H. 15	12th "	"	A.F. 14	29th "	"
M.M. 9	12th "	"	E.H. 14	29th "	"
H.O'B. 13	21st "	"	E.S. 13	30th "	Negative
E.S. 14	21st "	Negative	M.M. 9	30th "	Positive
A.C. 11	21st "	Positive	A.C. 10	6th Apr.	"
D.B. 10	21st "	Negative	M.H. 13	6th "	"
K.L. 6	21st "	Positive	M.W. 11	9th "	Negative
M.B. 9	21st "	"	A.L. 8	9th "	Positive
E.B. 9	21st "	"	M.J. 16	17th "	"
J.O'B. 13	21st "	"	J.D. 16	17th "	"
A.B. 9	27th "	"	H.D. 8	9th May	"
F.M. 10	27th "	"	A.K. 13	18th Sep.	"
T.L. 10	27th "	Negative	N.J. 6	28th Nov.	"
K.H. 10	27th "	"	M.D. 14	28th "	"
H.D. 14	27th "	Positive	A.O'L. 7	26th Dec.	"
			M.L. 9	26th "	"

The cases may therefore be separated into groups, in which the onset of the disease may be placed under dates approximately as follows :—

Cases of	Dates.
Enteric Fever.	
5	5th—12th March.
8	21st March.
12	27th—30th March.
4	6th—9th April.
2	17th April.
1	9th May.
1	18th September.
2	28th November.
2	26th December.

Inquiries into the history of the outbreak elicited the following information. In the early part of March, 1912, several of the scholars were attacked with indefinite symptoms of illness, which at the time did not apparently point to enteric fever. Even before that date it was found upon inquiry that cases of illness, attributed generally to influenza, had occurred amongst the scholars, and, in fact, a death was registered in October, 1911, as due to pneumonia, which, in the light of subsequent events, has been regarded by the medical attendant as possibly associated with enteric fever, and on the 27th October, a pupil died in the Institution, whose death was certified as due to morbus cordis.

Further, it is reported that a scholar who was admitted from Bargoed, in Monmouthshire, on the 16th September, 1911, and who left on the 19th of the following month, was ill with a continued high temperature during the greater part of the time when she was in the Institution. The Medical Officer of Health for that district informed me that a case of enteric fever, a boy aged 13 years, was notified to him on the 18th September, but that he was not aware of any other cases in his district at that time.

It was found that fourteen of the resident pupils had suffered from illness with definite symptoms between October, 1911, and March, 1912. In each of these cases the blood was examined at the Public Health Laboratory, with the result that in nine cases a positive reaction was obtained by Widal's test. Of these, one was a girl working in the laundry, and one who occasionally helped in the dairy work.

Inmates of Nazareth House, not suffering from enteric fever, whose blood gave positive reaction with Widal's test (dilution 1 in 50) :—

M.McC.	...	...	Aged 9 years	...	Ill during October, 1911.
M.C.	...	...	12 "	...	" " " "
W.C.	...	...	11 "	...	" " " "
A.A.	...	...	10 "	...	Ill during November, 1911.
L.T.	...	...	16 "	...	" " " (working in laundry).
H.R.	...	...	19 "	...	" " " (working in dairy)
M.C.	...	...	10 "	...	" " " "
E.W.	...	...	12 "	...	Ill during February, 1912.
H.S.	...	...	12 "	...	" " " "

A careful examination of the drainage of the premises revealed some slight defects, but there was no reason to attribute the outbreak to this circumstance, as the system was generally working in a satisfactory manner. The water supplied to the Institution was derived from the Cardiff public supply and was beyond suspicion. There was no evidence of milk infection, either at the source of supply or in distribution before delivery at Nazareth House. The greater part of the milk came from a farmer in the immediate neighbourhood, who also supplied a large number of persons in this district, none of whom was infected. Two cows were kept upon the Nazareth House premises, giving a limited supply from time to time. No evidence of any food infection was obtained. There is, of course, the suspicion that the milk or other food may have been infected in the school by some unrecognised "carrier." Attention was therefore concentrated upon this possible source of infection, and strict instructions were given that all milk supplied to the inmates of the school should be sterilised before distribution, and that all suspected "carriers" should be suspended from duties connected with the storage and distribution of milk.

These measures were apparently attended with some success. As already mentioned, they were adopted in the early part of April, and the cases occurring after the middle of that month were comparatively few, and may have been due to some other source of infection. The evidence of milk conveyance is by no means conclusive, although there are circumstances pointing in this direction, and it would seem at least highly probable that one or more of the inmates suspected, although not proved, to be "carriers" may have infected the milk during the storage or distribution upon the school premises.

MEASLES.—This disease was unusually prevalent during the year 1912, causing 202 deaths, this number being equal to an annual death-rate of 1.09 per 1,000 persons living.

The mortality from this disease during the past eleven years is given below :—

Year.	No. of deaths.	Death-rate per 1,000.
1902	184	1.10
1903	27	0.16
1904	64	0.37
1905	80	0.46
1906	2	0.01
1907	176	1.00
1908	5	0.03
1909	21	0.12
1910	44	0.24
1911	7	0.03
1912	202	1.09

Measles is a disease which occurs in all large towns in an epidemic form every two or three years, and on these occasions spreads with great rapidity through the town, each outbreak lasting a comparatively short time. The mortality therefore varies greatly in each quarter of the year. During the year 1912, the 202 deaths from this disease were distributed in the municipal wards as follows. From this table it will be seen that the mortality rose to its highest point in the second quarter, diminished rapidly in the third, and disappeared altogether in the fourth quarter.

TABLE LVIII.

Deaths from Measles during the year 1912 :—

	1st Quarter.	2nd. Quarter.	3rd. Quarter	4th. Quarter.	Total.
Central Ward ... ..	...	11	...	...	11
South Ward ... ..	...	15	2	...	17
Cathays Ward	12	14	1	...	27
Adamsdown Ward ... ..	...	13	2	...	15
Riverside Ward ... ..	...	11	...	...	11
Canton Ward	2	15	1	...	18
Grange town Ward ... ..	...	34	4	...	38
Roath Ward ... ..	...	17	1	...	18
Park Ward	3	13	1	...	17
Splott Ward	4	25	1	...	30
Totals	21	168	13	...	202

The mortality, as usual, was almost entirely confined to children under five years of age, 192 out of the 202 deaths at all ages being amongst those under that age. The distribution of measles amongst the scholars of the several public elementary schools is given in the Annual Report to the Education Authority.

It is the practice in Cardiff to exclude from school attendance the patient and other children in the same household attending the infant department of schools, and also elder children who have not previously suffered from the disease. It is found from experience, that however prevalent measles may be in the town, the spread of the disease is practically confined to the infant classes, and that children who have previously suffered from an attack may attend school from infected houses without any danger to others.

TUBERCULOSIS.—The deaths from all forms of tuberculosis during the year 1912, amounted to 308, including 244 from pulmonary tuberculosis or phthisis. The mortality from phthisis was equal to an annual death-rate of 1·32 per 1,000, as compared with 1·27, the average rate in the ten years 1902–1911.

The mortality from phthisis and other forms of tuberculosis in Cardiff since the year 1880 is shown in the following table :—

TABLE LIX.

Year.	Deaths from Phthisis.	Deaths from Other Forms of Tuberculosis.	Death-rate per 1,000 (Phthisis).	Year.	Deaths from Phthisis.	Deaths from Other Forms of Tuberculosis.	Death-rate per 1,000 (Phthisis).
1880	177	89	3·21	1896	203	114	1·38
1881	176	77	2·96	1897	206	131	1·99
1882	187	68	2·86	1898	203	117	1·32
1883	186	58	2·67	1899	208	119	1·32
1884	223	55	2·97	1900	212	110	1·25
1885	241	107	3·58	1901	179	122	1·05
1886	214	67	2·78	1902	224	98	1·34
1887	210	75	2·72	1903	217	93	1·28
1888	211	93	2·80	1904	246	98	1·44
1889	224	108	2·79	1905	235	103	1·36
1890	231	142	3·18	1906	229	95	1·31
1891	239	124	2·78	1907	220	91	1·25
1892	242	127	1·82	1908	218	94	1·22
1893	230	151	1·68	1909	234	74	1·30
1894	227	134	1·62	1910	216	88	1·19
1895	242	127	1·67	1911	235	81	1·28
				1912	244	64	1·32

TABLE LX.

Death-rates from Phthisis per 1,000 persons living in the several Municipal Wards :—

	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
CARDIFF ...	1·34	1·28	1·44	1·36	1·31	1·25	1·22	1·30	1·19	1·28	1·32
Roath Ward	1·01	0·70	1·45	1·12	0·74	0·72	0·71	0·96	1·18	1·11	0·83
Park „	0·60	0·80	1·01	0·89	0·69	0·79	0·82	0·95	0·92	1·24	0·99
Splott „	0·90	0·60	0·54	0·96	1·12	0·59	0·81	0·69	0·76	1·19	1·09
Central „	1·60	1·60	1·83	1·43	1·23	0·62	1·22	0·81	1·77	3·44	2·64
South „	1·90	1·30	2·15	1·30	1·15	1·54	1·53	1·40	2·50	2·86	2·57
Cathays „	0·50	0·70	0·84	0·88	0·67	0·75	1·04	0·72	1·02	0·86	1·22
Adamsdown Ward	1·10	1·50	1·03	0·95	1·96	1·59	1·09	1·42	1·24	1·21	1·50
Riverside „	1·70	0·50	0·66	1·00	0·94	1·00	1·48	0·60	1·27	0·80	1·35
Canton „	0·40	0·50	0·88	1·17	0·78	1·02	0·76	0·98	1·05	1·04	1·17
Grangetown „	0·70	1·10	1·27	1·21	1·34	1·10	0·90	1·09	1·08	0·90	1·25

The continuous decline in the rate of mortality from phthisis in Cardiff since the year 1875 is shown in Chart F. Chart G. shows the mortality rates amongst males and females respectively for a portion of the period. The mortality from diseases of the respiratory organs, other than phthisis, is also included in Chart F. for the following reasons. In the earlier part of the period to which the chart refers, owing to imperfect methods of diagnosis and to carelessness in certifying and registering deaths, many cases of fatal illness were attributed to phthisis which should more properly have been referred to other causes. Any chronic chest affection usually received the name of consumption, and deaths from such affections would be registered as due to phthisis, although in many instances they should more properly have been included amongst the deaths from diseases of the respiratory

organs, such as bronchitis and pneumonia. The readings of the chart are therefore subject to this probable source of error, and allowance must be made for the transference from phthisis to diseases of the respiratory organs, resulting from the more accurate statement of the causes of death which has taken place in recent years. For these reasons the decline in the rate of mortality from phthisis, although undoubtedly considerable, is probably not so great as would appear from these readings. The improvement which has taken place in this mortality during past years sufficiently indicates the direction which administrative measures must take in order that still further improvements may be accomplished. Reference to these measures is made in some detail further on in this report.

The following is a statement of the number of cases of pulmonary tuberculosis notified to the Medical Officer of Health under the several Regulations in force during the year 1912.

TABLE LXI.

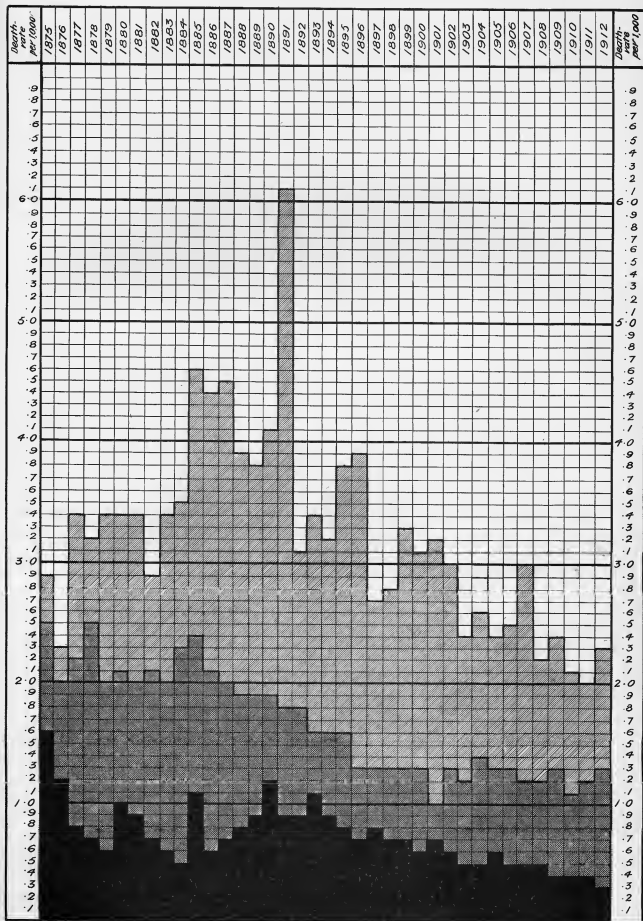
	Number of Cases Notified.							
	At all ages.	Under 1 year	1 and under 5 years	5 and under 15 years	15 and under 25 years	25 and under 45 years	45 and under 65 years	65 and upwards.
Public Health (Tuberculosis) Regulations, 1908	82	1	1	7	15	42	15	1
Public Health (Tuberculosis) Regulations, March, 1911	66	—	—	14	17	25	10	—
Public Health (Tuberculosis) Regulations, November, 1911	351	2	18	76	74	135	42	4
Totals	499	3	19	97	106	202	67	5

By a new "Order" of the Local Government Board, the Public Health (Tuberculosis) Regulations, 1912, became operative on the 1st February, 1913. These regulations repeal the three series of regulations of December, 1908, March, 1911, and November, 1911, relating to the notification of pulmonary tuberculosis, simplify the system of notification, and extend it to all forms of tuberculosis.

In the Board's circular letter relating to the regulations, attention is called to the provisions of the National Insurance Act, 1911, which contemplate the provision of treatment on a comprehensive scale for persons suffering from tuberculosis. It is pointed out that any scheme which is to form the basis of an attempt to deal with the problem of tuberculosis should be available for the whole community, and would be best carried out if undertaken by the County or County Borough Council, and that as these Authorities are the bodies primarily concerned in the administration of the public health laws of this country, they must occupy an important position in any general scheme dealing with tuberculosis. It is also stated that if a scheme is undertaken by them, which covers, not only the insured and their dependents, but also those who fall under neither category, the Exchequer will under these circumstances bear half of any deficiency. In a further letter, dated 6th December, 1912, the Board state that they look to *Councils of Counties and County Boroughs*, or combinations of these bodies, to formulate complete schemes even though parts of such schemes may in some instances be carried out by voluntary agencies, as the organization of such schemes necessarily forms part of the *public health administration* of the area to which they relate. It is pointed out that in order to secure compliance with the terms of the Act, and at the same time to arrive at a complete scheme for the treatment of tuberculosis generally, it will be desirable that the Insurance Committee should extend sanatorium benefit, in so far as institutional treatment is concerned, to the dependents of insured persons, and should arrange, subject to the consent of the Insurance Commissioners, to pay over to *the local authorities* the sums available for institutional

Chart F

SHOWING THE DEATH-RATES PER 1,000 OF THE POPULATION FROM
RESPIRATORY DISEASES, PULMONARY TUBERCULOSIS AND OTHER TUBERCULOUS
DISEASES IN CARDIFF, DURING THE YEARS 1875-1912



Respiratory Diseases Pulmonary Tuberculosis
Other Tuberculous Diseases

treatment, the *latter* being responsible for such treatment of *all classes*, whether insured or dependents of the insured or non-insured.

Where arrangements on these lines are made with the Insurance Committees and approved by the Insurance Commission, the general treatment of tuberculosis will be secured, and it will be possible for the Board to make grants in aid of the total cost of the complete schemes. The intention is that the amount of the annual grant should be one-half of the total net cost incurred, within reasonable limits, by or on behalf of a county or county borough council, or combinations of these bodies, in the treatment in dispensaries, sanatoria, and hospitals, which form parts of a scheme approved by the Board for the general treatment of tuberculosis in the area, of all persons, whether insured persons, dependents of insured persons, or persons who are neither themselves insured persons nor their dependents, after deducting the amounts received from Insurance Committees out of the moneys available under the National Insurance Act for sanatorium benefit, and any sums received in respect of the treatment of non-insured persons or otherwise. The local authority and the Exchequer would thus each be responsible for one-half of the net deficiency on the whole scheme.

Where any parts of a scheme are to be carried out by a voluntary association by arrangement with the council, the contributions of the council towards the expenditure of the voluntary association should be included in the council's estimate. It is understood that the sums voted by Parliament in aid of the expenses of the treatment of tuberculosis will be distributed in Wales by the Welsh Insurance Commissioners.

The essential conditions of any scheme, towards the expenses of which the Government will contribute, are clearly defined by the Board in the letter referred to, and comprise comprehensive measures to be undertaken by the *Council or Sanitary Authority*, who may, whilst retaining full responsibility and control over the administration and expenditure, delegate any parts of the scheme to any approved voluntary agency.

The conditions in Wales differ somewhat from those in England, in the establishment of a voluntary association which is endeavouring to deal with the treatment of tuberculosis upon a national basis. The King Edward VII. Welsh National Memorial Association having obtained a charter, has conferred upon it the powers expressed in Section 82 (3) and (4) of the National Insurance Act, 1911, as follows:— (3) "The powers of the Local Government Board with respect to the distribution of any sum available for the purpose of the provision of or making grants in aid to Sanatoria and other institutions shall, as respects the part thereof apportioned to Wales, be exercised by the Welsh Insurance Commissioners." (4) "If before or within twelve months after the commencement of this Act there is established for Wales by royal charter, an association for the purpose of providing sanatoria and other institutions for the treatment and prevention of tuberculosis, or such other diseases as the Local Government Board, with the approval of the Treasury, may appoint, the Welsh Insurance Commissioners in making and the Treasury in approving grants for any such sum as is in sub-section (3) mentioned, shall have regard to the provision of such institutions, which may have been made, or may be proposed to be made, by the association."

Through the great generosity of the chief promoters of this Association and others, a sum of about £200,000 has been collected as a fund for dealing with tuberculosis in a comprehensive manner, by the provision of hospitals, sanatoria and dispensaries throughout Wales, in which both insured and uninsured suffering from tuberculosis will be treated. The money in support of maintenance and treatment in Institutions will be derived to some extent from the income of the Association, from the County and County Borough rates, and also from the Insurance Committees (sanatoria benefit), aided by Government grants as provided by the Insurance Act. Insurance Committees are advised to extend sanatorium benefit to the dependents of the insured, and in some instances (Cardiff amongst others) these Committees have already resolved to do so.

The Councils of Counties and County Boroughs are now invited to undertake the whole administration so far as institutional treatment of tuberculosis is concerned for all persons, whether insured persons, dependents of insured persons, or other persons, upon the understanding that the Government will make a further grant to meet the extra expense of dealing with all classes of the community. The amount of the annual grant to County Councils and County Borough Councils

to meet their expenditure will be one half of the total net cost incurred by them after deducting the amount received from Insurance Committees (sanatorium benefit). It is probable that the amount available from the Insurance Committee for sanatorium benefit will be inadequate for dealing with any but insured persons, so that the greater part of the money spent in treating and preventing tuberculosis will ultimately come out of the County and County Borough rates.

The domiciliary treatment of insured persons suffering from tuberculosis will be given as part of the "medical benefit" under the Insurance Act.

It is understood that the Government grant towards the expenses of an inclusive scheme will in Wales be administered by the Welsh Insurance Commissioners, and not by the Local Government Board, as in England. In a memorandum issued by these Commissioners, dated 22nd May, 1912, it is stated that "if any grant in aid of sanatoria and other institutions is made by the Commissioners to a County Council, they may authorise the County Council to provide and maintain any such institution either directly or by agreement with the King Edward VII. Memorial Association or others. County Councils are also empowered to pay half the excess cost of extending sanatorium benefit to the dependents of insured persons, the other half being met by the Treasury."

It is now proposed to hand over the Treasury grant (Hobhouse), together with the money derived from the rates and the Insurance Committees, directly to the Memorial Association, to be administered by them for the benefit of the principality as a whole, thereby relieving the Councils of Counties and County Boroughs of the administrative control of the funds which they provide for the purpose of dealing with tuberculosis. An arrangement of this kind is, in my opinion, inadvisable, as likely to encourage a feeling amongst members of these Councils that, having transferred their responsibilities as guardians of the public health to an outside body or association, no further efforts are required on their part.

It would, I believe, be a serious misfortune if exaggerated ideas of the advantages of the institutional treatment of tuberculosis were to prevail to any extent. Preventive measures should certainly take the first place in any comprehensive scheme for stamping out this disease, and local authorities are the bodies upon which powers have been conferred to carry out these measures. They alone have statutory powers for improving the conditions under which tuberculous persons live. Modern methods of institutional treatment may do much towards the recovery of certain cases, and may be the means of educating and training patients in the methods of life most suitable to their disease, but such efforts will be in vain unless sanitary authorities take full advantage of the powers which have been conferred upon them.

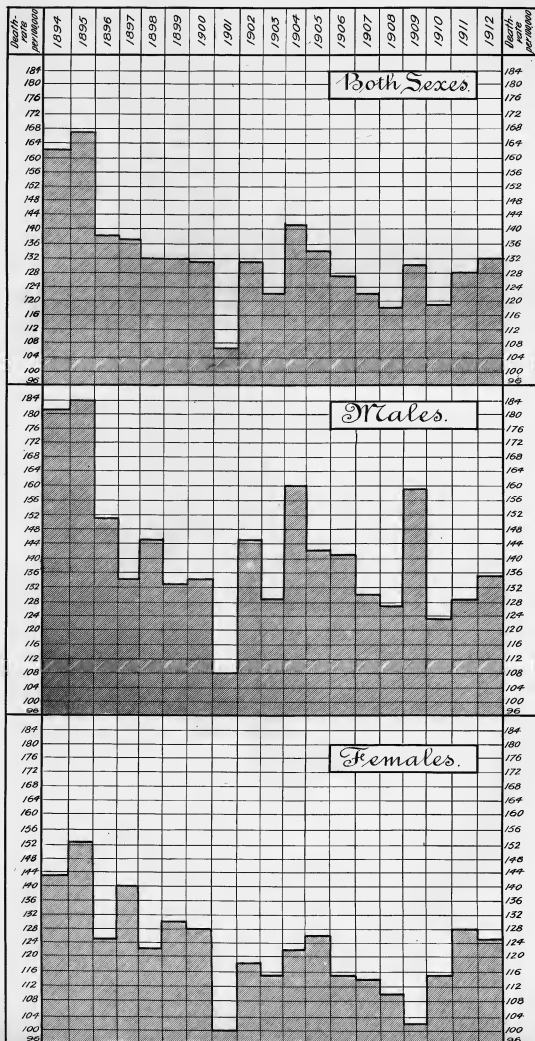
The problem of dealing with tuberculosis has been considerably altered by the National Insurance Act, and especially by those provisions which relate to "sanatorium benefit," which is defined in the Act as "treatment in sanatoria or other institutions or otherwise when suffering from tuberculosis, or such other diseases as the Local Government Board with the approval of the Treasury may appoint." The "benefit" is administered by the Local Insurance Committees, who may make arrangements to the satisfaction of the Insurance Commissioners for the treatment of the insured in sanatoria, &c. The institutions referred to would include sanatoria, hospitals and dispensaries; the term "otherwise" would include "domiciliary treatment," i.e., treatment at the home of the patient by his own medical practitioner, subject to certain regulations issued by the Insurance Commissioners. Under the provisions of the Insurance Act, therefore, domiciliary treatment of tuberculosis is one of the forms of "sanatorium benefit" to which an insured person is entitled.

The cost of domiciliary treatment is included in the capitation grant for medical benefit, and all medical practitioners on the panel are by the terms of their agreements with the Insurance Committee under obligation to give such treatment to any of their patients, and it has already been pointed out that the Councils of Counties and County Boroughs may out of their rates make provision for the institutional treatment of tuberculosis amongst all classes of the community, and in this case they will receive an annual Government grant equivalent to one half of the total cost incurred, after deducting the amounts received from the Insurance Committees out of moneys available for "sanatorium benefit."

The ordinary income of the Insurance Committees for the administration of "sanatorium benefit" is $\frac{1}{3}$ per annum in respect of each insured person. Of this amount, sixpence per

Chart G

SHOWING THE DEATH-RATES PER 100,000 FROM PULMONARY TUBERCULOSIS
IN CARDIFF DURING THE YEARS 1894 - 1912.



In the year 1909 the Medical Officer of the Local Government Board, Dr. Newsholme, issued a memorandum on "Administrative Measures against Tuberculosis," in which the powers and duties of sanitary authorities are clearly set forth. Stress is laid upon the educational measures which may be undertaken in connection with any scheme for dealing with tuberculosis. Experience has shown that there is much need of more exact knowledge upon the subject of infection. On the one hand there is a danger at the present time of exaggerated notions of the danger of infection, whilst on the other hand ignorance and carelessness prevail. It is therefore most desirable that definite information and instructions should be imparted to the public. This can best be done by the Medical Officer of Health or Tuberculosis Officer, through Health Visitors and Nurses, who, if they possess tact and discretion, can easily gain the confidence of those subject to their ministrations.

The administrative measures which have been adopted in Cardiff as a result of the complete notification of tuberculosis comprise :—

- (1) The domiciliary visitation in selected districts by three Health Visitors.
- (2) Educational measures, comprising the instruction by means of printed pamphlets and verbally of those who are tuberculous, and of those who are exposed directly to infection.
- (3) The disinfection and cleansing of infected houses and articles after a change of residence or death of the patient.
- (4) The prevention of overcrowding, and attention to the ventilation of living and sleeping rooms.
- (5) The supply of sputum flasks and pots to those requiring them.
- (6) The free bacteriological examination of sputum for medical practitioners, and the examination of samples of milk for the presence of tubercle bacilli.
- (7) The enforcement of the bye-law prohibiting spitting in public places.
- (8) The provision (through the Welsh Memorial Association) of sanatorium and hospital accommodation, and a tuberculosis dispensary.
- (9) The provision by the Education Authority of an open-air school is still under consideration.

It should be mentioned that the Memorial Association has been particularly fortunate in having secured the services of Dr. Marcus Paterson as Medical Director, and of Dr. James C. Gilchrist as Tuberculosis Officer for the Cardiff District, who has charge of the tuberculosis dispensary in this district.

It is impossible in this report to give a detailed account of the work which has been carried out during the year 1912 at the Tuberculosis Dispensary, as the systematic treatment of cases of tuberculosis by the Tuberculosis Officer was only commenced in the autumn of that year, when the "sanatorium benefit" sections of the Insurance Act first came into operation.

The functions of a tuberculosis dispensary are set forth in the Interim Report of the Departmental Committee on Tuberculosis, in which it is made clear that in large urban districts the work of this institution must be organised in connection with the ordinary public health work of the Local Authority; and the Committee state that, in their opinion, "the bodies legally responsible for the establishment and maintenance of the tuberculosis dispensary should be the Councils of Counties and County Boroughs," and "the scheme which the Committee recommend for the prevention, detection, and treatment of the disease, is intended to complete existing public health administration in respect of tuberculosis, and is based on the establishment and equipment of two units related to the general public health and medical work carried on by the Medical Officers of Health

and working in harmony with the general practitioner. The first unit consists of the tuberculosis dispensary. The second unit consists of the sanatorium, hospital, &c., in which institutional treatment is given."

The Committee state that "the 'dispensary' contemplated by them is not a building, but an organism, and that the essential element which must always be present is the tuberculosis officer appointed by the local authority, standing in such relation to the Medical Officer of Health and the general scheme of public health administration as may be defined by the regulations of the local authority." The Committee also recommend that "the tuberculosis officer of the dispensary should be independent of control by any other medical man so far as his clinical duties are concerned, and should, subject to his relationship to other officers, as defined by the local authorities' regulations, be responsible for the management of these institutions. He should be in intimate relationship not only with Medical Officers of Health, but also with the general practitioners in the locality.....," and that in a general way the dispensary should serve as—" (1) Receiving house and centre of diagnosis; (2) Clearing house and centre for observation; (3) Centre for curative treatment; (4) Centre for the examination of 'contacts'; (5) Centre for 'after care'; (6) Information bureau and educational centre."

The dispensary should serve as an efficient organisation for the early detection of the disease, as patients will come to the tuberculosis officer to ascertain whether or not they are tuberculous. He will be able to classify them and recommend them for the treatment suitable in each case, *i.e.*, dispensary, sanatorium, hospital, or domiciliary. The Committee recommend that dispensaries and hospitals for advanced cases are particularly adapted to the needs of large towns, and in view of misunderstandings which have arisen in some places, it may be well to point out that they lay stress upon the desirability of locating these institutions in populous districts, so that they may be easily accessible to the friends of patients, and upon the fact that there is no danger of infection being conveyed from these institutions to the occupants of neighbouring houses. Such misunderstandings obviously arise from an imperfect knowledge of the principles upon which the prevention and treatment of tuberculosis are founded. Upon this point the observations of Dr. A. Newsholme are of interest, who in his memorandum on "Administrative Measures against Tuberculosis," states that—"In the homes of the poor, it often happens that suitable bedroom accommodation cannot be provided for advanced cases of pulmonary tuberculosis, and that the wife or other relative in charge of the patient is overworked, and thus rendered more easily a victim to the same infection. Hence, the medical attendance and nursing of a large proportion of the total advanced cases in hospitals must form an essential part of any effective scheme for preventing tuberculosis. It is to a very large extent a need already met, for though the provision of hospital beds for such cases has not, in the main, been made with any intention of diminishing the total mass of infection, it has operated in that way. Not only in general and special hospitals, but on an immensely larger scale throughout the country, and especially in our towns and cities—in which the domestic nursing of cases of pulmonary tuberculosis is therefore most dangerous—consumptives have been treated in workhouse infirmaries, many of them under excellent conditions, and probably all of them under conditions less likely to cause spread of infection than the dwellings of the very poor and the destitute. Such arrangements need to be extended, and the hospital treatment of the bed-ridden consumptive in the ideal state will be made so popular that domestic infection will become much less frequent than at present."

It is sufficiently clear, therefore, that the segregation of advanced cases of tuberculosis in properly equipped hospitals will be the means of reducing the risks of infection in the localities served by them, as such cases will be removed from unsuitable homes and surroundings, in which they are a danger to the community, to institutions under medical control, in which all danger from infection would be reduced to a minimum.

Tuberculosis is essentially a home disease and must be attacked in the home, which is frequently the centre of infection. The danger to the inmates of the home or immediate neighbourhood depends entirely upon the conditions of life to which the patient is subject. If he is living in a dirty, damp, ill-ventilated and overcrowded dwelling, the danger is great. On the other hand if he is living under favourable hygienic conditions, the danger does not exist. If it were otherwise it would be improper to segregate advanced cases of tuberculosis in hospitals, and to deal with them

in dispensaries in populous districts, as advised by the Departmental Committee. It is a clear advantage to the community that such cases should be removed from surroundings where they are a danger to others, to surroundings and conditions where they are no danger to any one.

In this connection Dr. Arthur Ransome remarks that—"It must never be forgotten that infection by tubercle is conditional, and that the conditions under which it can take place are mainly three. They are (1) the presence of a virulent form of the bacillus, (2) a susceptible body to receive it, and (3) such external circumstances as are favourable to infection. Unless all these conditions are present it is unlikely that the disease will spread infectively through any community. Even when both the bacillus and a susceptible person are present, if the surrounding circumstances be such that the virulence of the microbe is destroyed before it can reach its victim, then no infection will take place."

Fortunately, fresh air and sunlight are the most efficient agents in the rapid destruction of the virulent forms of the tubercle bacillus.

DISINFECTING STATION AND MORTUARY.—The new Disinfecting and Cleansing Station, for which the Sanitary Authority borrowed money by permission of the Local Government Board, and for which plans were prepared by the City Engineer, Mr. W. Harpur, is now under construction, and will be completed and ready for use in June this year. The new Station is situated on land adjacent to the Mortuary.

As regards disinfection, infected premises are disinfected either by fumigation with sulphur dioxide, with formaldehyde, or by means of a spray of formalin. Articles of clothing and bedding are for the most part removed from the house in which the infectious disease occurred to the temporary disinfecting station in Sloper Road, and submitted to disinfection by saturated steam, at a pressure of 30 lbs. on the square inch, in a Washington Lyon's high pressure steam disinfecting apparatus.

During the year the routine disinfection comprised the following :—

Houses disinfected	...	...	...	...	...	...	1,269
School class-rooms disinfected	...	...	...	...	...	...	48
Articles of bedding, clothing, etc. disinfected	...	...	...	...	...	...	8,141
" " " destroyed	...	...	...	...	...	...	174

The number of bodies removed to the Mortuary during the year was 73 (62 males and 11 females). Inquests were held by the City Coroner in 72 of these cases. The number of post-mortem examinations performed was 36.

CARDIFF METEOROLOGICAL STATION.—The Cardiff Meteorological Station is situated on land belonging to the Corporation (Waterworks Department) at Penylan.

The geographical position of the Station is Latitude 51° 30' N., Longitude 3° 10' W., and the height of the Station above mean sea level is 203 feet.

The Meteorological Station is under the control of the Medical Officer of Health. Observations are made at 9 a.m., and 9 p.m.,—at 9 a.m. by Mr. F. Glover, of the Medical Officer of Health's Department, and at 9 p.m. by Mr. W. J. Mellings, caretaker of the Penylan Waterworks and Public Telescope.

The Station is recognised by the Meteorological Office, London, as a Station of the Second Order, and is periodically inspected by an Inspector from that Office, who has on each occasion reported favourably upon the arrangements, and upon the way in which the observations are taken and the records kept.

The instruments in use have been verified at the Kew Observatory, and the necessary instrumental corrections are duly made.

A weekly report on the weather is sent to the Meteorological Office, London, which is included in the Weekly and Monthly Weather Reports issued by that office.

The averages with which the monthly rainfall and mean temperature are compared are those for the twenty-three years 1889-1911, and the sums following the signs + and — in the following tables show respectively the difference from the average, either above or below.

TABLE LXII.
BAROMETRIC PRESSURE AND RELATIVE HUMIDITY.

1912					Mean Barometric Pressure*		Hygrometer*		
					Uncor- rected.	At M.S.L. and 32°F.	Dry-bulb (mean).	Wet-bulb (mean).	Mean Relative Humidity.
					in.	in.	°F.	°F.	%
January	...	...	...	...	29-718	29-911	40-8	40-2	95
February	...	...	...	...	29-427	29-622	44-5	43-2	89
March	...	...	...	...	29-490	29-677	44-6	43-1	88
April	...	...	...	...	29-999	30-180	48-0	44-4	75
May	...	...	...	...	29-817	29-976	53-6	50-6	80
June	...	...	...	...	29-968	30-120	56-0	53-4	83
July	...	...	...	...	29-782	29-920	60-3	57-2	82
August	...	...	...	...	29-590	29-744	54-9	52-7	85
September	...	...	...	...	30-000	30-162	52-1	49-2	81
October	...	...	...	...	29-734	29-909	46-9	45-2	88
November	...	...	...	...	29-820	30-002	44-6	42-6	84
December	...	...	...	...	29-689	29-878	45-5	44-2	90
Means	...	...	...	...	29-753	29-926	49-3	47-2	85

* From observations at 9 a.m. and 9 p.m.

TABLE LXIII.

TEMPERATURE.

1912	Maximum.	Minimum.	Mean of Maximum.	Mean of Minimum.	Mean Temperature.	Difference from Average (23 years).
	°F.	°F.	°F.	°F.	°F.	°F.
January	50.2	20.7	43.1	35.0	39.0	+0.4
February	55.5	19.0	46.9	37.0	43.0	+3.1
March —	55.9	33.0	51.0	40.2	45.6	+3.3
April	67.8	32.1	56.1	40.4	48.2	+2.1
May	70.5	38.7	60.8	46.2	53.5	+1.1
June	71.3	41.0	63.2	50.7	56.9	—0.4
July	84.1	43.3	67.7	54.3	61.0	+0.3
August	67.2	38.3	61.2	48.4	54.8	—5.5
September	68.1	39.3	59.4	45.8	52.6	—3.8
October	60.1	31.1	54.8	40.3	47.5	—2.6
November	57.1	28.4	49.8	40.0	44.9	+0.7
December	54.8	27.9	50.2	40.6	45.4	+4.8
	Max. 84.1	Min. 19.0	Mean 55.3	Mean 43.2	Mean 49.2	+0.1

TABLE LXIV.

SOLAR AND TERRESTRIAL RADIATION, UNDERGROUND TEMPERATURE, AND SUNSHINE.

1912.	TEMPERATURE.				Bright Sunshine.
	Solar Maximum (Mean).	Grass Minimum (Mean).	Underground (Mean).		
			1 ft.	4 ft.	
	°F.	°F.	°F.	°F.	hrs.
January	58.7	33.3	41.2	44.1	49.9
February	74.2	34.4	40.7	43.4	62.2
March	96.9	38.0	45.2	45.2	97.6
April	104.8	36.1	49.3	47.7	214.6
May	104.8	42.2	56.2	52.0	166.4
June	114.5	47.2	59.8	55.6	176.1
July	111.1	51.5	62.6	58.4	154.7
August	106.0	45.1	58.1	57.8	92.9
September	103.1	43.1	54.6	56.1	147.3
October	86.0	34.8	48.6	52.3	105.7
November	69.6	35.8	45.6	49.4	53.6
December	62.8	36.6	43.7	46.7	32.3
	Mean 91.0	Mean 39.8	Mean 50.5	Mean 50.7	Total 1353.3

Chart H

SHOWING RAINFALL, MEAN BAROMETRIC PRESSURE AND MEAN TEMPERATURE,
RECORDED AT THE METEOROLOGICAL STATION, PENYLAN, CARDIFF,
IN EACH WEEK DURING THE YEAR 1912.

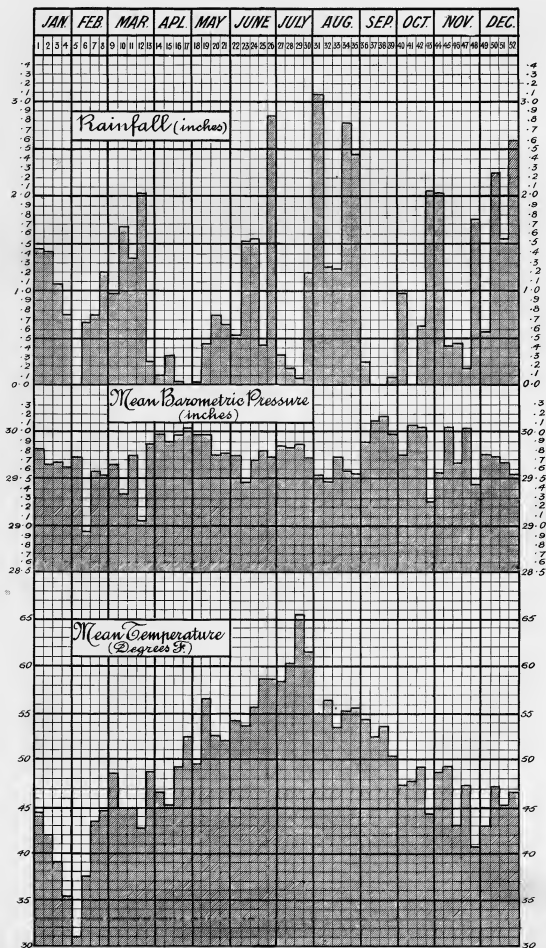


TABLE LXV.

RAINFALL.

1912.					Amount.	Difference from Average (23 years).	*Greatest Fall in 24 hours.	*Date of Greatest Fall.	*No. of days with Rain (0·01 in. or more).
					ins.	ins.	ins.		
January	...	...	...	...	4·69	+ 1·28	·75	8th	23
February	...	...	...	...	3·04	+ 0·28	·48	12th	23
March	...	...	...	...	5·95	+ 3·12	·70	4th	27
April	...	...	...	...	0·35	—2·38	·18	9th	7
May	...	...	...	...	1·88	—0·40	·56	21st	13
June	...	...	...	...	6·94	+ 4·25	·89	27th	22
July	...	...	...	...	3·53	+ 1·05	1·00	27th	17
August	...	...	...	...	8·95	+ 4·83	1·25	28th	23
September	...	...	...	...	0·81	—1·89	·47	29th	4
October	...	...	...	...	5·18	+ 0·38	1·14	27th	18
November	...	...	...	...	2·81	—0·72	·85	26th	16
December	...	...	...	...	7·26	+ 2·64	·78	27th	26
					Total				Total
					51·39	+ 12·44	1·25	28th Aug.	219

* 24 hours ending 9 a.m. next day.

CARDIFF SANATORIUM.

Report of the Medical Superintendent for the year 1912.

	0 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	Totals.
Remaining in Hospital 31st Dec., 1911 :—								
Scarlet Fever	22	61	10	2	—	—	—	95
Diphtheria	7	26	2	2	2	—	—	39
Enteric Fever	—	—	2	2	—	1	—	5
Totals	29	87	14	6	2	1	—	139
Admitted during the year 1912 :—								
Scarlet Fever	104	251	31	5	2	—	—	393
Diphtheria	80	265	49	11	6	—	1	412
Enteric Fever	—	32	8	3	3	—	1	47
Small-Pox	—	—	—	—	—	1	—	1
Measles	—	—	2	1	—	—	—	3
Totals	184	548	90	20	11	1	2	856
Totals under treatment in 1912	213	635	104	26	13	2	2	995
Of the above there were discharged :—								
(a) Recovered :—								
Scarlet Fever	101	253	32	6	1	—	—	393
Diphtheria	72	246	50	13	8	—	1	390
Enteric Fever	—	27	8	2	2	1	—	40
Measles	—	—	2	1	—	—	—	3
Totals	173	526	92	22	11	1	1	826
(b) Died :—								
Scarlet Fever	1	3	—	—	1	—	—	5
Diphtheria	7	14	—	—	—	—	—	21
Enteric Fever	—	1	2	2	1	—	1	7
Totals	8	18	2	2	2	—	1	33
Remaining in Hospital 28th Dec., 1912 :—								
Scarlet Fever	24	56	9	1	—	—	—	90
Diphtheria	8	31	1	—	—	—	—	40
Enteric Fever	—	4	—	1	—	—	—	5
Small Pox	—	—	—	—	—	1	—	1
Totals	32	91	10	2	—	1	—	136
Totals under treatment in 1912	213	635	104	26	13	2	2	995

Mortality per cent. under treatment :—

Scarlet Fever ... 1.03 Diphtheria ... 4.65 Enteric Fever6
 Small Pox ... nil.

B. W. BROAD, M.B., *Medical Superintendent.*

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.—The following statement, taken from the Annual Report of Mr. J. H. Sugden, M.Sc., F.I.C., Chemist and Bacteriologist to the Joint Laboratory Committee, shows the work carried out in the Laboratory during the year 1912 :—

SPECIMENS AND SAMPLES EXAMINED DURING 1912.

BACTERIOLOGICAL EXAMINATIONS.

Suspected Diphtheria	...	...	...	...	1,005
Suspected Typhoid Fever	...	...	...	...	276
Sputum for Tubercle Bacilli	...	...	...	...	597
Milks for Tubercle Bacilli	...	...	...	...	85
Milks, other examinations	...	...	...	...	4
Diseased Meat	...	...	...	...	16
Rodents for Plague	...	...	...	...	35
Gonococcus	...	...	...	...	7
Urines for Typhoid or Coli Bacilli	...	...	...	...	7
Other Examinations	...	...	...	...	14
					<hr/> 2,046

CHEMICAL EXAMINATIONS.

Urine Analyses	...	...	...	...	157
Milks and Milk Products	...	...	...	...	63
Beverages	...	...	...	...	8
Tinned Foods	...	...	...	...	4
Soils	...	...	...	...	6
					<hr/> 238

DRINKING WATERS.

Bacteriological Examinations	...	...	...	...	230
Chemical Analyses	...	...	...	...	142
RIVER WATER	...	...	...	...	16
					<hr/> 388

SEWAGES AND EFFLUENTS.

Sewages and Sewage Effluents	...	...	...	129
Trade Effluents	...	...	...	97
				<hr/> 226
Total	...	...	...	<hr/>2,898

The above statement includes samples and specimens submitted for examination from Cardiff and the County of Glamorgan.

The specimens for suspected diphtheria, typhoid fever, and tuberculosis submitted for examination from Cardiff, together with the results of such examinations, are shown below :—

Nature of Examination.	Positive Results.	Negative Results.	Total.	Percentage of Positive Results.
Suspected Diphtheria	86	198	284	30.3
„ Typhoid Fever	43	94	137	31.4
„ Tuberculosis	78	206	284	27.4

Mixed milks from Cardiff examined for Tubercle Bacilli :—

Number examined	...	...	...	...	...	39
Positive	...	...	...	...	...	3
Negative	...	...	...	...	...	36
Percentage of positive results	...	...	...	...	...	7.7

Although the samples were all from milk supplies serving the city, the original sources of the milk were in most cases outside Cardiff.

Samples of water from the various Cardiff reservoirs and filter beds were examined at frequent intervals, both bacteriologically and chemically, with the object of controlling the purity of the water supply at its sources, during transit, and in the service, in addition to testing the efficiency of the various filter beds. Samples of sand, deposit, and other material associated with the public water supply have also been examined. The action of the filtered water upon various metals has been tested and reported upon.

Bacteriological examinations were made of sixty-eight samples of drinking water from ships, submitted by the Cardiff Port Sanitary Authority, with the following results :—

Contaminated	...	...	...	...	17
Doubtful Purity	...	...	...	...	9
Satisfactory	...	...	...	...	42

The total number of specimens and samples examined at the Laboratory during the year 1912, amounted to 2,898, as compared with 2,313 in the previous year. Altogether 998 specimens and samples were submitted from Cardiff—146 waters and 852 specimens.

I have the honour to be,

My Lord Mayor and Gentlemen,

Your obedient Servant,

EDWARD WALFORD,

Medical Officer of Health.

APPENDIX.

CITY OF CARDIFF.
LOCAL GOVERNMENT BOARD TABLES. TABLE I.
VITAL STATISTICS OF WHOLE DISTRICT DURING 1912 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.			
		Un-corrected Number.	Nett.		Number.	Rate.	of Non-residents registered in the District.	of Residents registered in the District.	Under 1 Year of Age.		At all Ages.	
			Number.	Rate.					Number.	Rate per 1,000 Net B.rths.	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1907	175,318	4,865	4,865	27.7	2,923	16.6	141	37	639	131	2,819	16.1
1908	177,143	5,172	5,172	29.2	2,610	14.7	136	64	644	124	2,538	14.3
1909	178,987	5,026	5,026	28.0	2,619	14.6	156	86	518	103	2,549	14.2
1910	180,849	4,822	4,822	26.6	2,454	13.5	165	67	537	111	2,356	13.0
1911	182,729	4,744	4,730	25.8	2,671	14.6	189	112	639	135	2,594	14.1
1912	184,633	4,612	4,597	24.9	2,620	14.2	166	109	509	110	2,563	13.9

This Table is arranged to show the gross births and deaths in the district, and the births and deaths properly belonging to it with the corresponding rates. The rates are calculated per 1,000 of the estimated population.

In Column 6 are included the whole of the deaths registered during the year as having actually occurred within the district.

In Column 12 is entered the number in Column 6, corrected by subtraction of the number in Column 8, and by addition of the number in Column 9. Deaths in Column 10 are similarly corrected by subtraction of the deaths under 1, included in the number given in Column 8, and by addition of the deaths under 1 included in the number given in Column 9.

"Transferable Deaths" are deaths of persons who, having a fixed or usual residence in England or Wales, die in a district other than that in which they resided.

Total population at all ages	...	...	...	182,259
Number of inhabited houses	...	...	...	31,127
Average number of persons per house	...	...	...	5.8
Area of District in acres (land and inland water)	...	...	...	6,373

At Census 1911.

TABLE II.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1912.

NOTIFIABLE DISEASE.	NUMBER OF CASES NOTIFIED.										TOTAL CASES NOTIFIED IN EACH LOCALITY.				TOTAL CASES REMOVED TO HOSPITAL.
	At all Ages.	At Ages—Years.						East Cardiff Regis. Sub-Dist.	Central Cardiff Regis. Sub-Dist.	West Cardiff Regis. Sub-Dist.					
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.				65 and upwards.				
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera, Plague...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Membranous Croup)	536	5	114	332	56	22	5	245	162	129	408	...	...	...
Erysipelas	170	3	3	9	13	63	65	42	75	53	...	...	...	...
Scarlet Fever	472	4	129	297	33	8	1	179	158	135	385	...	...	...
Typhus Fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	56	...	3	38	6	6	3	5	41	10	44	...	...	...
Relapsing Fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	11	...	...	...	4	6	1	3	3	5	...	...	...	...
Cerebro-spinal Meningitis	1	...	...	1	...	...	...	...	1	...	...	...	...	...
Polionyelitis	1	...	1	...	...	...	...	...	...	1	...	...	...	...
Pulmonary Tuberculosis	499	3	19	97	106	202	67	140	188	171	...	...	...	...
Totals	1,746	15	269	774	218	307	142	614	628	504	837	...	...	...

TABLE III.

CAUSES OF AND AGES AT DEATH DURING THE YEAR 1912.

CAUSES OF DEATH.	NETT DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT.									Total Deaths whether of "Residents" or "Non-Residents" in Institutions in the District.
	ALL AGES.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.	
1	2	3	4	5	6	7	8	9	10	11
All causes { Certified ...	2,563	509	163	179	100	127	359	587	539	578
{ Uncertified ...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	15	...	...	...	4	2	5	4	...	9
Small-pox ...	...	...	...	...	...	...	...	...	...	...
Measles ...	202	42	68	82	9	1	...	...	...	5
Scarlet Fever ...	8	1	...	2	4	...	1	...	...	7
Whooping Cough ...	55	22	19	13	1	...	...	...	...	4
Diphtheria and Croup ...	31	...	3	9	18	1	...	...	...	23
Influenza ...	16	4	...	...	1	1	3	5	2	1
Erysipelas ...	6	2	...	...	...	...	1	2	1	1
Phthisis (Pulmonary Tuberculosis) ...	244	1	5	8	10	54	111	49	6	54
Tuberculous Meningitis ...	24	7	2	6	6	2	...	1	...	2
Other Tuberculous Diseases ...	40	7	7	6	7	3	4	6	...	15
Cancer, malignant disease ...	160	...	...	...	...	3	26	79	52	50
Rheumatic Fever ...	16	...	...	1	1	5	7	2	...	1
Meningitis ...	26	11	4	3	3	1	2	2	...	2
Organic Heart Disease ...	212	1	...	1	2	10	31	95	72	36
Bronchitis ...	203	53	8	5	1	...	4	41	91	34
Pneumonia (all forms) ...	191	59	17	24	4	2	28	33	24	24
Other diseases of										
Respiratory organs ...	39	2	6	1	2	...	6	11	11	6
Diarrhoea and Enteritis ...	51	44	4	...	...	...	...	1	2	5
Appendicitis and Typhlitis ...	5	...	...	...	2	...	2	1	...	10
Cirrhosis of Liver ...	13	1	...	...	...	...	...	10	2	2
Alcoholism ...	2	...	...	...	...	...	2	...	...	1
Nephritis and Bright's Disease ...	76	...	1	2	2	3	10	43	15	24
Puerperal Fever ...	3	...	...	...	...	1	2	...	...	1
Other accidents and diseases of Pregnancy and Parturition ...	19	...	...	...	...	6	13	...	...	3
Congenital Debility and Malformation, including Premature Birth ...	171	166	2	2	1	...	...	...	...	18
Violent Deaths, excluding										
Suicide ...	105	6	7	5	7	11	28	33	8	48
Suicide ...	14	...	...	...	...	1	3	9	1	3
Other Defined Diseases ...	608	79	9	9	15	20	67	157	252	188
Diseases ill-defined or unknown ...	8	1	1	...	...	...	3	3	...	1
Totals ...	2,563	509	163	179	100	127	359	587	539	578
Sub-entries (included in above figures)—										
Cerebro-spinal Meningitis ...	1	...	1	...	...	...	...	...	...	...
Poliomyelitis ...	...	...	...	...	...	...	...	...	...	...
Pneumonia other than Broncho Pneumonia ...	98	11	2	10	3	2	24	29	17	16

TABLE IV.

INFANT MORTALITY DURING THE YEAR 1912.

NETT DEATHS FROM STATED CAUSES AT VARIOUS AGES UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.			Under 1 week	1-2 weeks.	2-3 weeks	3-4 weeks.	Total under 4 weeks.	4 weeks and under 3 months.	3 months and under 6 months.	6 months and under 9 months	9 months and under 12 months.	Total Deaths under 1 year
All causes	Certified ...	...	105	39	34	13	191	98	70	68	82	509
	Uncertified	...	...	...	...	...	...	...	...	...	...	...
Small-pox	...	...	...	...	...	...	...	...	...	...	...	...
Chicken-pox	...	...	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	1	1	11	29	42
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	1	1
Whooping Cough	...	...	...	...	...	...	...	6	5	7	4	22
Diphtheria and Croup	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	...	...	...	1	...	...	1	...	1	...	...	2
Tuberculous Meningitis	...	...	...	...	...	...	...	...	...	3	4	7
Abdominal Tuberculosis	...	...	...	...	...	1	1	2	1	...	2	6
Other Tuberculous Diseases	...	...	...	...	...	...	...	...	2	...	...	2
Meningitis (not Tuberculous)	...	...	...	...	1	...	1	2	3	2	3	11
Convulsions	...	...	3	5	3	...	11	11	1	5	3	31
Laryngitis	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis	...	...	...	5	9	...	14	17	9	6	7	53
Pneumonia (all forms)	...	...	...	...	1	1	2	13	13	18	13	59
Diarrhoea	...	...	...	...	1	2	3	4	1	3	2	13
Enteritis	...	...	...	...	2	...	2	6	13	7	3	31
Gastritis	...	...	1	1	1	...	3	5	3	...	...	11
Syphilis	...	...	...	...	...	...	...	2	3	1	...	6
Rickets	...	...	...	...	...	...	...	1	...	...	...	1
Suffocation, overlying	...	...	...	...	...	...	...	2	...	...	...	2
Injury at birth	...	...	2	...	...	1	3	1	...	...	...	4
Atelectasis	...	...	8	...	1	...	9	1	...	...	...	10
Congenital Malformations	...	...	6	2	2	...	10	3	1	1	...	15
Premature Birth	...	...	64	15	6	1	86	4	1	...	...	91
Atrophy, Debility and Marasmus	...	...	13	8	6	6	33	14	6	1	6	60
Other Causes	...	...	8	2	1	1	12	3	6	3	5	29
Totals	...	...	105	39	34	13	191	98	70	68	82	509

Nett Births in the year { legitimate, 4,428.
 { illegitimate, 169.

Nett Deaths in the year of { legitimate infants, 464.
 { illegitimate infants, 45.

CITY OF CARDIFF.

ESTIMATED POPULATION

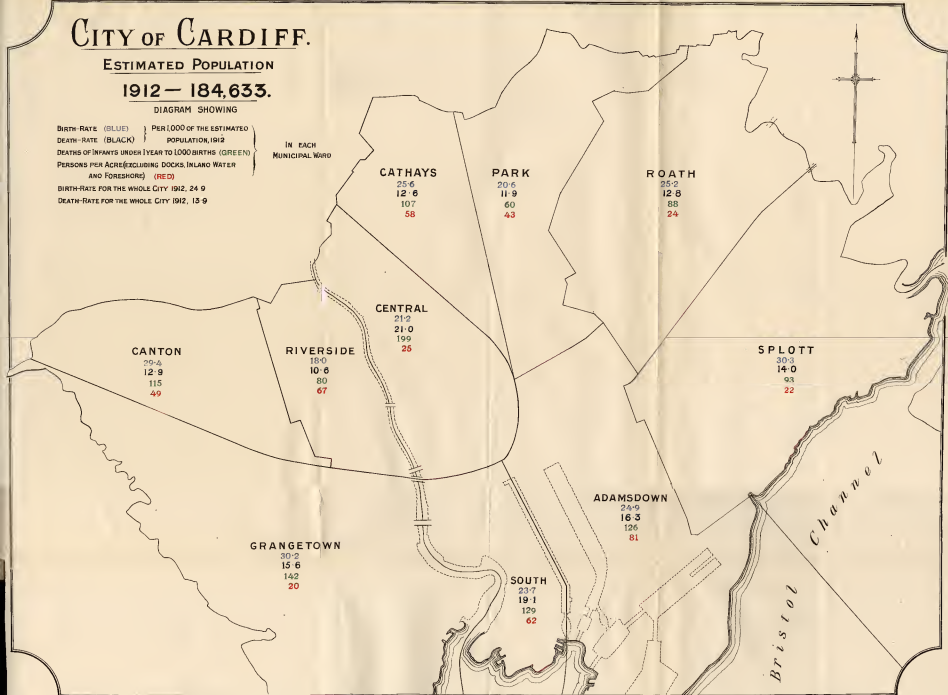
1912 — 184,633.

DIAGRAM SHOWING

BIRTH-RATE (BLUE) } PER 1,000 OF THE ESTIMATED
DEATH-RATE (BLACK) } POPULATION, 1912
DEATHS OF INFANTS UNDER 1 YEAR TO 1,000 BIRTHS (GREEN)
PERSONS PER ACRE (EXCLUDING DOCKS, INLAND WATER
AND FORESHORE) (RED)

IN EACH
MUNICIPAL WARD

BIRTH-RATE FOR THE WHOLE CITY 1912, 24.9
DEATH-RATE FOR THE WHOLE CITY 1912, 13.9



CAUSES OF DEATH.

	0 to 1		2 to 5		6 to 10		11 to 20		21 to 40		41 to 65		65 and upwards.		All Ages.		Rate per 1,000 living.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Measles	16	26	36	32	46	36	4	5	1	...	...	...	...	108	99	202	1.09
Scarlet Fever	1	...	...	...	1	1	2	2	...	...	1	...	...	4	4	8	0.04
Epidemic Influenza	1	3	...	...	...	...	...	...	1	...	2	...	...	22	3	16	0.08
Whooping Cough	9	13	9	10	4	9	...	...	...	...	...	...	...	16	15	31	0.17
Diphtheria, Membranous Croup	...	...	1	2	5	4	9	9	1	...	...	...	...	8	7	15	0.08
Enteric Fever ... ..	...	...	...	...	...	...	...	...	1	4	1	3	1	...	12	6	1.00
Diarrhoea	8	1	...	...	1	...	...	...	...	...	...	...	...	18	13	33	0.18
Epidemic or Zymotic Enteritis	16	15	2	...	...	...	...	...	...	...	...	...	...	1	...	1	0.00
Botulism ... ..	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	0.00
Other Allied Diseases ... ..	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	0.00
Syphilis	4	2	...	...	...	...	...	...	1	1	...	...	1	...	5	4	0.04
Erysipelas	2	...	...	...	...	...	...	...	1	1	...	2	1	...	2	4	0.03
Puerperal Fever ... ..	...	...	...	...	...	...	...	...	1	...	2	1	...	...	3	3	0.01
Pyæmia, Septicæmia ... ..	...	...	...	...	...	...	...	...	...	2	1	...	...	...	1	1	0.02
Septic, Ulcerated, Infective Endocarditis	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	1	0.00
Other Allied Diseases ... ..	...	...	...	...	...	...	...	...	...	1	1	...	1	1	2	3	0.01
Malaria Fever ... ..	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	0.00
Rheumatic Fever ... ..	...	...	...	...	1	...	1	1	4	3	4	...	2	...	5	11	0.08
Tuberculosis of Brain or Meninges, Acute Hydrocephalus	3	4	2	...	3	3	4	2	1	...	...	1	...	...	14	10	0.10
Tuberculosis of Larynx ... ..	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	0.00
Tuberculosis of Lungs, Phthisis, Phthisis Pulmonalis	1	1	4	4	3	3	1	...	38	35	14	5	1	126	117	243	1.32
Tuberculosis of Intestines, Tubæ Mesentericæ	3	2	1	5	2	1	1	2	1	...	...	1	...	...	8	11	0.19
General Tuberculosis, Tubercular disease of undefined position	1	...	...	...	2	3	1	1	...	...	2	1	...	10	3	13	0.07
Other forms of Tuberculosis, Scrofula	1	...	...	...	1	...	...	...	3	1	...	...	...	5	3	8	0.04
Other Infective Diseases ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Alcoholism, Delirium Tremens	...	...	...	...	...	...	...	...	1	1	...	...	...	1	1	2	0.01
Other Chronic Poisonings ... ..	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	1	0.00
Osteo-arthritis, Rheumatoid Arthritis	...	...	...	...	...	...	...	...	1	2	8	18	32	2	1	4	0.02
Cancer ... ..	...	...	...	...	...	...	...	...	1	2	2	4	5	3	10	11	0.11
Diabetes Mellitus ... ..	...	...	...	...	...	...	...	...	2	2	...	...	...	...	3	3	0.01
Purpura Hemorrhagica ... ..	...	...	...	...	...	...	...	...	...	1	...	1	...	...	3	3	0.01
Anæmia, Leucocythæmia ... ..	...	...	...	...	...	1	1	1	2	1	2	6	1	1	10	6	0.08
Premature Birth	45	46	...	...	...	...	...	...	...	...	...	...	...	45	46	91	0.02
Injury at Birth	3	1	...	...	...	...	...	...	...	...	...	...	...	...	3	1	0.01
Debility at Birth	31	27	1	...	...	...	...	...	...	...	...	...	...	32	28	60	0.32
Atelectasis	4	6	...	...	...	...	...	...	...	...	...	...	...	4	6	10	0.05
Congenital Defects	10	5	...	...	1	1	...	...	...	...	...	...	...	1	1	2	0.01
Want of Breast Milk	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	0.00
Atrophy, Debility, Marasmus	...	2	1	...	...	...	...	...	...	...	...	...	...	...	2	2	0.01
Dentition ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rickets	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	0.00
Old Age, Senile Decay ... ..	...	...	...	...	...	...	...	...	...	...	...	3	65	70	65	73	0.74
Convulsions	22	9	1	2	...	...	...	...	...	...	...	...	...	23	12	35	0.19
Meningitis	4	7	3	1	1	2	1	2	...	1	2	...	1	1	12	14	0.14
Encephalitis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	0.00
Apoplexy	1	1	...	...	...	...	...	...	2	2	14	11	13	20	30	34	0.34
Softening of Brain ... ..	...	...	...	...	...	...	...	...	...	...	...	1	...	...	3	3	0.01
Hemiplegia, Brain Paralysis ... ..	...	...	...	...	...	...	...	...	...	...	...	10	7	6	7	16	0.16
General Paralysis of Insane ... ..	...	...	...	...	...	...	...	...	...	...	...	2	1	4	2	4	0.08
Other forms of Insanity ... ..	...	...	...	...	...	...	...	...	6	2	3	2	...	1	15	15	0.08
Cerebral Tumour ... ..	...	...	...	...	...	...	...	...	1	1	1	...	...	...	1	2	0.01
Epilepsy	2	...	...	...	...	...	...	...	4	...	2	1	1	...	10	1	0.01
Locomotor Ataxia ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	0.01
Paralysis, Diseases of Spinal Cord	...	...	...	...	...	...	2	1	...	3	2	2	5	8	8	16	0.08
Other and ill-defined Diseases of Brain or Nervous System	1	...	1	...	...	...	...	...	1	...	1	2	1	2	7	9	0.04
Otitis, Otorrhœa	1	...	...	...	...	...	...	...	1	...	...	...	...	...	2	2	0.01
Pericarditis ... ..	...	...	...	...	...	...	...	...	1	1	...	...	...	1	1	2	0.01
Endocarditis, Valvular Diseases of the Heart ... ..	...	...	...	...	1	...	1	1	7	4	15	9	44	32	35	29	0.06
Anæmia Pectoris ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	0.03
Anæmism ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	8	0.04
Senile Gangrene ... ..	...	...	...	...	...	...	...	...	...	...	...	1	2	...	2	1	0.01
Embolism, Thrombosis ... ..	...	...	...	...	...	1	1	1	...	...	2	...	...	3	3	5	0.01
Phlebitis ... ..	...	...	...	...	...	...	...	...	...	...	5	5	16	17	13	6	0.33
Other and ill-defined Diseases of Heart and Circulatory System	...	...	...	...	...	...	...	...	...	...	...	...	...	34	28	62	0.33
Laryngitis ... ..	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	2	0.01
Croup ... ..	...	...	3	...	1	...	...	...	...	...	...	...	...	3	1	4	0.02
Other Diseases of Larynx and Trachea	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.00
Acute Bronchitis	27	25	3	5	3	2	...	...	2	...	2	5	9	55	44	99	0.55
Chronic Bronchitis	1	...	...	...	...	...	...	...	2	...	24	10	30	47	56	88	0.62
Lobar, Croupous, Acute Pleuro-Pneumonia	...	...	...	...	...	...	...	...	7	3	7	1	4	3	21	9	0.16
Subular, Catarrhal, Broncho-Pneumonia	30	18	13	3	8	6	...	...	3	1	3	1	4	3	61	33	0.50
Pneumonia, form not stated	5	5	...	...	1	3	6	1	1	...	9	5	14	5	4	37	0.36
Emphysema, Asthma ... ..	...	...	...	...	...	...	...	...	2	4	3	1	2	5	7	12	0.06
Pleurisy	1	...	2	...	...	...	...	...	3	...	1	1	5	2	2	4	0.02
Other and ill-defined Diseases of Respiratory System	1	...	...	...	...	...	...	...	3	...	...	...	...	13	3	16	0.08
Diseases of Mouth and Anæxa ... ..	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2	...	0.01
Diseases of Pharynx	1	...	1	...	...	...	...	...	...	...	...	...	...	2	1	3	0.01
Ulcer of Stomach and Duodenum	...	...	...	...	...	...	...	...	1	...	2	1	1	1	2	4	0.03
Other Diseases of Stomach	6	5	...	...	3	1	...	...	2	3	6	4	3	3	19	18	0.20
Enteritis ... ..	...	...	...	...	...	...	...	...	1	...	1	1	...	4	10	10	0.05
Appendicitis and Typhlitis ... ..	...	...	...	...	...	1	1	1	...	...	1	...	...	...	3	2	0.02
Obstruction of Intestine	2	1	...	...	...	...	...	...	1	1	2	5	5	2	10	9	0.10
Other Diseases of Intestine ... ..	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2	2	0.02
Cirrhosis of Liver	1	...	...	...	...	...	...	...	...	9	1	1	1	...	12	13	0.07
Other Diseases of Liver ... ..	...	...	...	...	...	...	...	...	1	1	3	1	1	3	5	8	0.04
Peritonitis ... ..	...	...	...	...	...	1	2	...	...	2	1	...	...	1	2	5	0.03
Other and ill-defined Diseases of Digestive System	...	...	...	...	...	...	...	...	...	1	1	...	...	2	1	3	0.01
Diseases of Lymphatic System and Ductless Glands	...	1	...	1	...	...	...	...	...	1	...	...	...	...	2	1	0.01
Acute Nephritis ... ..	...	1	...	1	1	1	1	2	...	2	3	8	4	...	15	9	0.24
Bright's Disease ... ..	...	...	...	...	...	...	1	3	2	19	13	11	4	...	34	19	0.23
Calculus ... ..	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	0.00
Diseases of Bladder and Prostate	1	...	...	...	...	...	...	...	1	4	...	7	...	13	...	13	0.07
Other and ill-defined Diseases of Urinary System	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	2	0.01
Diseases of Ovaries ... ..	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	0.00
Diseases of Uterus and Appendages ... ..	...	...	...	...	...	...	...	...	...	...	5	...	...	...	5	5	0.02
Diseases of Vagina and External Genital Organs	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	0.00
Abrasion, Miscearage ... ..	...	...	...	...	...	...	...	...	1	...	2	...	...	...	3	3	0.01
Puerperal Mania ... ..	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	0.00
Puerperal Convulsions ... ..	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	0.00
Placenta Prævia, Flooding, Accidental Hemorrhage	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	2	0.01
Other and ill-defined Accidents & Diseases of Pregnancy & Childbirth	...	...	...	...	...	...	...	...	4	...	8	...	...	...	12	12	0.06
Arthritis, Ostitis, Periostitis ... ..	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	1	0.00
Other and ill-defined Diseases of Osseous System	1	...	...	...	...	...	...	...	...	...	...	1	...	...	3	3	0.01
Ulcer, Bedore ... ..	...	...	...	...									